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ANNUAL REPORT

by

Chief Engineer

S. A. LUBETKIN

to the

PASSAIC VALLEY SEWERAGE COMMISSIONERS

FOR OPERATIONS DURING

THE YEAR

1974

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January 30, 1975

Passaic Valley Sewerage Commissioners
600 Wilson Avenue
Newark, New Jersey

Gentlemen:

I herewith submit my annual report to the Commissioners for the year 1974. It is composed of three parts.

Part I is a series of special reports on various subjects that either have a bearing on the Passaic Valley Sewerage Commissioners' operations and future operations, or that may affect the residents of the Passaic Valley District. Some of the reports are repeats of reports that have been issued during the year, but they have been updated. These repeat reports are so indicated by a month in parenthesis which indicates the date of the original report.

Part II concerns discharges to the Passaic River or any of its tributaries within the Commissioners' policing area (from the Great Falls in Paterson to the Mouth of the River at Newark Bay) that were found to be polluting and that were terminated or eliminated during the year 1974. These former violations are, in a sense, a measure of the Commissioners' success in their fight to remove pollution from the lower Passaic River.

Part III concerns polluting discharges that were still violating the law as of the end of 1974, with a summary of how they were detected, together with what has been done to date in the Commissioners' attempts to have them halted.

Very truly yours,

S. A. Lubetkin

S. A. Lubetkin,
Chief Engineer

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PART II - POLLUTION VIOLATIONS TO THE PASSAIC RIVER OR ITS TRIBUTARIES IN THE COMMISSIONERS' DISTRICT AND THEIR ELIMINATIONS DURING 1974

SPECIAL REPORT #1 - (FROM SEPT. 1974 REPORT)

REPORT ON PVSC IMPROVEMENT PROGRAM

Many times a description of the PVSC treatment plant and a description of the proposed improvements are requested. This report attempts to answer these questions, together with estimated costs (in 1974 dollars) of the work to be done.

The present system of the PVSC consists of the following structures:

1. Administration and Laboratory Building
2. Scum, Screenings and Grit Incinerator
3. Screening and Grit Chamber
4. Pumping Station
5. Gate House
6. Maintenance Building
7. Sedimentation Basins
8. Chlorination Facilities
9. Head House
10. Sludge Thickening and Storage Tanks
11. Sludge Pumping Station and Dock
12. Outfall

A more detailed description of the present systems follows, with a detailed description of future improvements being described immediately following that.

1. The Administration and Control Building permits a total management system for the related functions of the sewage treatment plant, its intercepting sewer, flow meters from municipalities, and the signals received from sampling stations on the Passaic River. It brings together one of the most modern sewerage facility laboratories with engineering, administrative, and control functions. In addition, there is a large room set aside for future computer metering and control functions for the new facilities and for monitoring contributing industries and the Passaic River. The building is an "L" shaped, 2 story plus basement, brick-faced masonry and reinforced concrete structure, approximately 107 feet long by 94 feet wide, containing a total usable area of approximately 21,000 square feet.

2. The Incinerator Building contains two furnaces, each rated at a maximum capacity of 14,600 pounds per hour, two oil and grease flotation tanks, two grit storage bins, one ash storage bin, two air compressors, a central instrument and control room, and other necessary appurtenant equipment. The Incinerator's function is to destruct and render inert, all grit, screening and floating materials intercepted by the grit and screenings chamber for ultimate disposal, without producing deleterious effect to the environment. Necessary air pollution control devices are incorporated to comply with local, State and Federal requirements. The building consists of a structural steel frame, brick-faced masonry and reinforced concrete structure, 120 feet long, 92 feet wide, and 60 feet high.

3. The Grit and Screenings Chamber represents the initial treatment unit of the sewage plant, and its function is to remove grit, certain suspended matter, and floating material from the flow. It is designed to process peak flows up to 720 million gallons per day, a capacity sufficient to the year 2040. It is a reinforced concrete structure, approximately 330 feet long, 135 feet wide, and 35 feet

deep. Its superstructure, approximately 135 feet long, 48 feet wide, and 27 feet high, is a brick-faced masonry structure.

The chamber consists of an inlet structure with two gates, a trash rack, a two-compartment aerated forebay, an upstream automated grease skimming device, 6 bar screens, 6 grit channels, a downstream grease skimming device, screenings, grit, grease and oil preparation and conveyance equipment, dewatering facilities, an effluent channel, and a diversion chamber.

The inlet structure, which intercepts the flow from the existing main interceptors, includes a chamber for connection for a future relief interceptor force main. It contains a trash rack with an automated raking device for the removal of large floating and suspended solids, such as logs and cans. Provision is made to grind this material for return to the flow, and subsequent removal by the screens.

Aeration facilities are provided in the forebay to aid in grease flotation and limit settlement of solids. The forebay is split into two compartments to permit dewatering and cleaning of either side. An automated skimming device at the end of the forebay operates on a time cycle to sweep the liquid surface of floating greases and oils. These materials are then directed to either of two wells, where they are homogenized and then pumped to the separation tanks in the Incinerator Building.

The sewage flow then enters six parallel channels, each of which contains an inlet gate, an automatic bar screen with 7/8 inch openings, a grit elevator, grit collectors, and an outlet gate. The mechanically operated grit collectors, in the channels, continuously scrape grit to the grit elevator. The inlet and outlet gates enable the isolation of a channel for cleaning, maintenance, and dewatering purposes.

The material intercepted by each bar screen is automatically raised and dropped into a grinder from which it passes to a pneumatic ejector which automatically conveys it directly to either furnace in the Incinerator Building. The grit, raised by each of the grit elevators, is directed to a screw conveyor which directs it either to a pneumatic ejector for automatic conveyance to the storage bins in the Incinerator Building, or back to the channels for rewashing. Grit and screenings quantities are measured, and this data, along with signals from motors, valves, ejectors, flow rates and levels, are transmitted to the control center for the integrated operation and control of the incinerator facilities.

4. The Pumping Station contains an engine room which houses two diesel radial engine-driven variable speed centrifugal pumps, each of 200 mgd capacity, and two electric motor-driven constant speed centrifugal pumps, each of 130 mgd capacity. The station also houses meters and controls, emergency diesel generators, a machine shop, stock rooms, lubrication oil reclaim units, and an administration wing containing offices.

5. The Gate House, also called the valve chamber or venturi meter chamber, contains control devices which direct flow into one of two discharge conduits from the pumping station - an influent conduit leading to 16 sedimentation tanks, thence to the Head House; and an emergency conduit which bypasses the basins and leads to the Head House.

6. The Maintenance Building contains the carpenter shop, paint shop, electrical shop, pipe and sheet metal fabricating shop, in addition to locker and wash rooms for personnel. Also, there is an adjacent blacksmith and iron shop.

7. The Sedimentation Basins are grouped into three sets. Set 1 has 8 tanks and a total of 24 compartments; each compartment is approximately 25 feet wide by 104 feet long. Mechanical sludge scrapers operate the length of each compartment, and cross collectors scrape collected sludge from groups of three compartments (a tank) into hoppers at the influent end. Scum pipes at the effluent channels of the compartments convey skimmings to a well from which the material is pumped to sludge thickening and storage tanks. Set 2 has 4 tanks and a total of 20 compartments; each compartment is approximately 25 feet wide by 72 feet long, and, except that that the cross collectors each serve five instead of three compartments for each basin, operation and equipment are the same as in Set 1. Set 3 has 4 tanks and a total of 16 compartments; each compartment is approximately 25 feet wide by 84 feet long. Except that the cross collectors each serve four compartments of each tank, operation and equipment are identical to Sets 1 and 2. All compartments of all sets are approximately 18 feet deep.

Effluent overflow troughs are provided for the entire perimeter of each tank in addition to the intermediate transverse effluent troughs which number 3 per tank in Sets 1 and 3, and 2 per tank in Set 2.

8. The Chlorination Facilities consist of a railroad spur, a tank car unloading station, and a chlorination buildng. The building contains a solution water pumping station, rooms for evaporators, chlorinators, a control office, an inspection corridor, and necessary piping and appurtenances.

The railroad spur leads to two tracks adjacent to the unloading station which provides capacity for six (6) 90-ton liquid chlorine tank cars, three of which can be hooked up at any one time, and to a manuevering track which obviates the need for a switching engine.

The chlorination building is an "L" shaped, brick-faced, masonry and concrete, one-story structure with basement, approximately 64 feet long by 52 feet wide. Its basement contains two strainers to cleanse the plant's effluent for use as solution water, and six pumps to feed the solution water to the chlorinators. The basement contains, in addition, two boilers to provide steam for the evaporators and spatial heat, and two air compressors for operating control and two compressors for use in chlorine unloading from tank cars.

The evaporator and chlorinator rooms on the main floor are separated by an inspection gallery. The six evaporators in the evaporator room each have a capacity of 2,000 pounds per hour to convert liquid chlorine to a gas for use by the chlorinators. The chlorinator room contains six 40,000 lbs. per day chlorinators, four to be used for post-chlorination, one for pre-chlorination, and one for either service.

The office-control room contains chlorine residual analyzers and all other necessary controls and devices for automatic operation and monitoring of each system, and to indicate and sound an alarm if a malfunction should occur. A chlorine leak detection system will turn on high speed ventilating fans, sound an alarm and shut down the systems automatically. Other necessary safety features have been incorporated into the various portions of the work.

The Chlorination Facilities, which are capable of providing a peak rate of 240,000 pounds of chlorine per day, are, to the best of our knowledge, the largest and most modern chlorination facilities in the world.

9. The two-story Head House, located at the effluent shaft, contains eight, cylinder-operated, cast iron sluice gates. Two gates, normally kept open, are located on a conduit which conveys treated effluent to the shaft thence to New York Harbor. The other six gates are used during emergencies to allow excess flow into Newark Bay during times when the capacity of the outfall might be exceeded.

10. Two Sludge Thickening Tanks, each 100 feet in diameter by 25 feet high, provide for sludge thickening. Deflector and scraper blades, located on the bottom of rake arms, move thickened sludge to outlets at the center of each tank, which supernatant is drained back to the sedimentation basins. Each tank is capable of thickening the sludge to over 10% solids concentration. Additional facilities consist of three emergency sludge lagoons, two 80-foot diameter by 40-foot high sludge storage tanks, and a valve building measuring about 25 feet by 16 feet. The capacity of each sludge tank is equal to approximately three days storage.

11. The Sludge Pumping Station contains four sludge recirculating pumps and four raw sludge pumps. Sludge from the sedimentation basin hoppers flows to the station wet well, from which it is pumped to thickening and storage tanks, and thence to storage until final disposal into barges at the Commissioners' dock.

12. The Outfall Works include all conduits, shafts, tunnels and dispersal facilities from the head house to Robbins Reef in Upper New York Bay (see Plate A). Effluent from the sedimentation basins flows through an effluent conduit to the head house, located at the 14-foot diameter Newark Shaft (at which point a control chamber and gate also permit discharge through a lower conduit into Newark Bay). At the bottom of the Newark Shaft, a 10.5 foot by 12.5 foot outfall tunnel extends about 9,000 feet to the 12-foot diameter Bayonne Shaft. After rising in the Bayonne Shaft, flow is carried through a 12-foot diameter outfall tunnel to the Robbins Reef Terminal Chamber in Upper New York Bay. From the chamber, two 90-inch diameter pipes carry flow to the 3.5 acre dispersal field where flow is discharged through 150 diffusion nozzles spaced at ten-foot centers, from 40 to 60 feet below the surface of the Bay.

In addition, the PVSC also own and operate two pumping stations, one located in Passaic and the other in Clifton. Two maintenance yards, one located in Newark and the other in Paterson, are also owned and operated by the PVSC.

The proposed additional facilities required for full secondary treatment are segmentized for construciton and are broken into two main construction phases.

Proposed Phase I Construction consists of Part A, Main Treatment Plant, and Part B, Sludge Handling Facilities, and is outlined on the following page, together with cost estimates (June 1974 dollars). Each Item (1 to 14) represents a separate contract, which breakdown will enhance competitive bidding, since it will allow medium size contractors to bid.

Part A - Main Treatment Plant

(1)	Influent pumping station, modifications to existing main pumping station, return and waste sludge pumping station, together with appurtenant conduits, chambers and tunnels.	$20.129 million
(2)	Biological oxygenation tanks.	$50.116 million
(3)	Oxygen production and storage facilities	$18.645 million
(4)	Final clarifiers and adjacent tunnel	$48.549 million
(5)	Effluent and process water pumping station, non-potable water chlorination building, flow conduits and chambers, and chlorine contact tank	$21.084 million
(6)	Operation and maintenance building	$6.309 million
(7)	Electric sub-station, transformer stations, feeders, and emergency generating facilities	$9.724 million
(8)	Site work, paving, fence and outside piping	$3.135 million
(9)	River monitoring, customer metering and regulator modifications	$5.830 million
		$183.521 million

Part B - Sludge Handling Facilities

(10)	Sludge thickener complex	$14.871 million
(11)	Sludge treatment facilities	$44.988 million
(12)	Sludge supernatant treatment plant	$9.353 million
(13)	Treated sludge settling and sludge storage tanks with sludge pumping station	$14.835 million
(14)	Landscaping, paving, fence, land development, etc.	$1.210 million
		$85.257 million

TOTAL OF PARTS A & B . . . . . $268.778 million

Generally speaking, this will be the first and most important phase in converting the Commissioners' existing plant into a high grade secondary sewage treatment plant with the ability to remove approximately 93% of the BOD and suspended solids, so that the PVSC effluent conforms with required State and Federal effluent standards. The new plant will be capable of treating an average of 300 million gallons a day, with peak flows of 720 mgd, which will bring the plant into compliance through the year 2000 for treatment capacity, and to the year 2040 for hydraulic capacity. The first phase construction will surround the existing primary treatment plant and be accomplished while the present plant is fully operational. After this construction (end of 1978), these units will take over the treatment of the flow, and the existing sedimentation basins (primary treatment) will be destroyed and new primary clarifiers will be built in a second phase. The new primary clarifiers, a bridge over Doremus Avenue, landscaping, dock modifications, and renovations to existing sludge facilities, constitute Phase II construction. The total cost for Phase II is estimated at approximately $50.53 million dollars (based on June 1974 dollars). The above costs do not include engineering costs; however, the Commissioners have a fixed contract with the Consulting Engineer, and already have a grant and funds to cover this cost, so there is not expected to be any further financial demand on that item. However, the cost of supervision during construction of about $12 million dollars must be added to the above.

In addition, the Commissioners are presently purchasing the land needed for the above work; however, the funds for this are already on hand, and no further financing need be instituted for this item.

The individual items included in Phase I, Section A, are described in more detail, as follows:

(1) Influent Pumping Station, Modifications to Existing Main Pumping Station, Return and Waste Sludge Pumping Station, Screen and Grease Incinerator, and Appurtenant Conduits, Chambers & Tunnels

The new influent pumping station will contain six screw pumps, each with a capacity of 90 million gallons per day, operating against a lift of about 31 feet. The spiral blade of the pump screw will be about 12 feet 6 inches in diameter, and the hollow shaft will be about 6 feet 6 inches in diameter. The capacity of this station (450 m.g.d. firm, with 90 m.g.d. additional standby), together with the revised capacity of the existing station (375 m.g.d. firm, with 3 pumps and 125 m.g.d. standby) will be sufficient to handle all peak flows to the year 2040. During all dry weather flows, only the new station will be used. Flow from each screw pump will discharge to a combined channel located under the motor and control room, and then proceed via a two compartment primary bypass and main influent conduit to the biological oxygenation unit. After Phase II construction, this flow will go to the primary clarifiers and then return to the same conduit.

The existing main pumping station will be modified by removal of the existing diesel engines and their replacement with 1250 hp electric motors. All switchgear will be replaced and all four pumps refurbished. In addition, all screen and grit facilities will be removed and the space utilized for parking and storage. Since the existing station will be used for storm flows only, arrangements have been provided to drain the suction sewer and force main after every use.

Also in this item is the return and waste sludge pumping station. Return sludge pumping equipment will consist of three screw pumps (including one stand-by) each having a capacity of 75 m.g.d., operating against a lift of 20 feet. The spiral blade diameter will be 10 feet. Each pump will discharge to a common return

sludge effluent channel, and thence to two conduits for conveyance to the main conduit for conveyance to the biological oxygen units.

Waste sludge pumping equipment will consist of four variable speed torque flow-type pumps (including one stand-by), each having a capacity of 2.5 m.g.d. speed, and hence flow of the pumps will be controlled by a computer program, working through variable frequency motor controllers. Waste activated sludge will be metered and then conveyed via a force main to the sludge thickeners. The purpose of the return and waste sludge pumping station is to return the biologically active culture in the settled sludge from the final clarifiers to the oxygenation tanks, where it acts (feeds) upon the incoming sewage and metabolizes it. Since more sludge is generated than needed for return to the oxygenation facilities, the excess (waste) sludge is then pumped to the sludge handling facilities. Since additional grease is expected to be separated from the sewage, a two furnace scum and grease incinerator is also to be constructed on this phase, which until the Phase II construction, will burn the material collected in the final clarifiers, and subsequently, that collected in the primary clarifers. Various additional flow conduits and chambers for conveyance and control of flow will be constructed in this step, as will several hundred feet of tunnel for utilities and access among several structures.

(2) Biological Oxygenation Tanks

These tanks will consist of two sets of six covered tanks per set, with a gallery between sets. Each tank consists of four reactor stages in series, each 58 feet square by 30 feet deep. The gallery will contain a two compartment influent conduit, oxygen feed gas headers, pumps, and necessary piping meters, valves, instruments, switchgear, and controls.

The sewage from the pumping stations, together with the return sludge from the return and waste sludge pumping station, will enter the first stage reactor of each tank through individual lines containing meters and control valves. The mixed flow will pass successively through the four stages, passing through openings in the interstage walls. Flow equalization to each tank will be computer controlled. The final flow will then go over an effluent weir in the fourth stage to the mixed liquor channel. In each stage, a turbine mixer would drive a mixing blade impeller and sparger, conveying to each stage the appropriate amount of gaseous oxygen.

Atop the tanks will be a large compressor building containing 16 interstage compressors - 2 per stage for each set of six tanks, 2 purge compressors, a control room, electric and transformer rooms, and auxilliary equipment and piping. These interstage compressors act to remove the oxygen from the gas space above each stage and introduce it under pressure to the spargers in the next stage.

This system works in theory as the standard activated sludge system, except that instead of air, oxygen, under a low pressure, is used, so that the system works at a high oxygen level with a high oxygen absorption efficiency, due to the oxygen atmosphere, thus increasing efficiency over the normal activated sludge system. Thus, the four biological stages are used for the most efficient use of the oxygen, since in each stage the exhaust from the previous stage is used until in the last stage the gas contains only approximately 50% oxygen. However, because of overall gas utilization by the culture, the final gas volume, which is vented from the last stage, would have less than 20% of the initial gas volume; thus, oxygen utilization rate would actually be 90% or more for the four stages.

A competitive system, very similar, but utilizing six stages per tank, will be considered.

(3) Oxygen Production and Storage Facilities

Since a large amount of oxygen is needed for these facilities, (and for the effluent sludge supernatant treatment plant), the PVSC will build an oxygen production facility and a liquid oxygen storage tank to produce and store the required oxygen.

A cryogenic type facility would produce this oxygen. The plant would have a capacity of 1,000 tons per day of gaseous oxygen,or a mix of 70 tons of liquid oxygen and 660 tons/day of gaseous oxygen, and would contain two production lines of 500 tons per day each. Since average usage would be about 550 tons per day, one production line would normally be in operation, with the required 50 tons per day remainder coming from the storage tank. Each production line requires one 10,000 HP compressor and a large cooling tower, plus cold boxes, heat exchangers, columns and other auxilliary equipment. The second production line would be operated for refilling the storage tank and during periods of high oxygen demand. The required oxygen storage tank will be an insulated tank, approximately 46 feet in diameter by 70 feet high, with a capacity of 2,000 tons. A reinforced concrete slab would be provided to support the tank.

The storage tank will supply the liquid oxygen to two vaporizers, which will convert the liquid to gaseous oxygen for use in the treatment plant.

(4) Final Clarifiers and Adjacent Tunnels

The Final Clarifiers will consist of twelve rectangular tanks, each measuring 363 feet by 120 feet, with each containing three 120-foot diameter rotating suction-type sludge-collecting mechanisms in series. The center mechanism will also contain a skimming device. Six tanks would be constructed on each side of a Gallery.

The Gallery would contain the necessary scum and other pumps, pipes, valves, meters, instruments, switchgear, controls, a two compartment influent mixed liquor conduit, two sludge withdrawal conduits, and all other required appurtenances.

Mixed liquor from the Oxygenation Tanks Gallery would be distributed to each Final Clarifier, from the influent conduit, by means of an individual line which will be equipped with a flow meter and a control valve. Flow will then be directed to an influent channel running the full width of the tank, with sufficient port openings to provide proper flow distribution. Flow equalization to each tank will be computer controlled.

The clarified effluent from the tank will flow over weirs at the end of the tank into collecting troughs, which in turn will discharge into the effluent channels. The channels will convey the flow to the effluent pumping station.

The sludge from the final clarifiers will be conveyed in sludge withdrawal conduits, located in the gallery, to the wet well of the return and waste sludge pumping station. The sludge withdrawal line from each tank will be equipped with a meter and control valve, and flow equalization will be computer controlled.

(5) Effluent and Process Water Pumping Sation, Non-Potable Water Chlorination Building, Conduits and Chambers, and Chlorine Contact Tank

Since our new facilities will have a greater head loss than the primary plant,

and since a greater flow is required to New York Harbor before the remainder goes to Newark Bay, an effluent pumping station is required if treatment units almost 45 feet above ground are to be avoided. This station would contain a wet well and four automatically controlled variable flow propeller-type effluent pumps, each nominally rated at 250 m.g.d. The post-chlorination diffuser will be revamped and moved to the inlet of the station wet well. The discharge from the station will flow through a two compartment force main under Doremus Avenue, to an effluent overflow control chamber located on the existing conduits just east of sedimentation tank unit #3. All flows up to 440 m.g.d. will overflow weirs in this chamber set at El. 136.0, and direct the excess flows to a chlorine contact for detention, and then via a conduit to the Newark Bay outlet side of the Newark shaft, and thence to Newark Bay. This chamber can also be used to divert all flow to Newark Bay in the event the New York Harbor outlet system must be repaired. All gates will be removed from the Newark shaft.

A large quantity of non-potable quality water at a fairly high pressure is necessary for various plant treatment processes. Therefore, four 6.5 m.g.d. variable speed non-potable water pumps, and two 24 inch diameter strainers will be provided. In addition, four 6 m.g.d. pumps will be provided to furnish dilution water to the thickeners to aid in sludge thickening. These units are located in a dry well within the effluent pumping station.

To provide chlorine solution for the non-potable water, a small ton-cylinder type chlorination facility will be provided. The main plant effluent will be chlorinated by means of the recently completed chlorination facility.

A tunnel under Doremus Avenue, and various other tunnels connecting plant units, are included in this section.

(6) Operation and Maintenance Building

The existing Maintenance shops, which are inadequate and scattered in many locations, are to be centralized in this new building. The building will house a pipe shop, a carpenter shop, a machine shop, an iron shop, an electric shop, an electronic shop, a paint shop, a sampling and monitoring room, a computer room with centralized plant control board and programming room, offices for supervising operational and maintenance personnel, first aid room, lunch room, shower and wash room, clerical and file room, locker rooms, and garages and repair bays for PVSC maintenance vehicles. The building will be approximately 196 X 110 feet, and will be two stories high, with a basement which will contain boilers for heating and dehumidifying services for not only this building, but for adjacent structures.

(7) Electric Sub-Station and Emergency Generating Facilities

Since significantly more power will be needed for the new facilities, a large additional 138 KV sub-station will be required to receive the additional power required from Public Service, and convert it to useable voltages. In addition, several smaller sub-stations around the site will be required.

Since PVSC must operate sufficient facilities so as not to be flooded or impaired during power outage, and since the diesel engine driven pumps will be provided with electric motors instead, emergency turbine driven generators will be installed. There will be four generators, each capable of providing 2500 KW, which will be sufficient power to operate five new influent pumps, two effluent pumps,

and the head end facilities. Hence, even on loss of the two incoming service lines, the plant will be able to pump 450 m.g.d. The emergency system will automatically engage during power failure and will be used only during these periods for exercising the units.

(8) Site Work, Paving, Fence, and Outside Piping

This item is self-explanatory.

(9) River Monitoring, Customer Metering and Regulator Modifications

The present system of regulations of storm flow into the PVSC is manual in the lower part of the sewer and has automatic overflows in the Paterson area. The result is that when a storm occurs, it is necessary to call personnel out to manually divert enough of the storm water into the river, so as not to exceed the capacity of the pumping station. The new system will have each of the by-pass points equipped with a motor operated valve which will control the flow to the PVSC trunk sewer. Six large regulator stations will also be remotely controlled from the pumping station. There will also be level sensors indicating water level in the trunk sewer, so that the automatic operation may be supplemented by remotely operating the six larger regulating stations to optimize the discharge into the river.

There will be approximately ten locations along the Passaic River where automatic monitoring stations will be constructed. These stations will monitor various parameters, such as, dissolved chlorides, ortho-phosphates, oxygenation potential, dissolved oxygen, conductivity, pH, temperature, river stage height, total organic carbon, and turbidity. In addition, there will be located in each station an automatic sampler that will sample the river each hour and discharge the contents into separate containers located in a refrigerator. On the 25th hour the first container will be automatically emptied and a fresh sample put in. Thus, at any time the station is visited, samples can be had of the previous 24 hours in hourly increments. Thus, if something occurs, we will have a cross-section of the river for the past 24 hours in order to run analyses, such as heavy metals, C.O.D., or B.O.D. The automatic information will be transmitted to the central computer, where an alert system will be utilized to inform an operator that something abnormal in the river is occurring, so that an inspector can be dispatched to the area.

The present meters will be electrified, additional meters will be installed, and signals will be transmitted to the computers for constant monitoring. Meters and sampling devices will be installed on the large industrial waste dischargers to check that proper pretreatment is provided where necessary, and to supply the information which will be needed for the industrial cost recovery system.

The individual items included in Phase I, Part B, are described in more detail, as follows:

(10) Sludge Thickener Complex

New sludge thickening tanks will be installed to concentrate the sludge before further treatment. This will require twelve 100-foot diameter tanks, together with an access and control building,housing, piping, control, and auxiliary equipment.

(11) Sludge Treatment Facilities

The Passaic Valley Sewerage Commissioners will treat the sludge prior to proper disposal.

After much investigation, the Commissioners' consultants have recommended a thermal sludge conditioning system. This system will heat the sludge to approximately 380°F. at a pressure of approximately 800 psi. At this temperature and pressure, the organic content will be reduced by 50 per cent and the sludge characteristics changed to permit further concentration. This will reduce the total volume of sludge to be disposed of and will result in a sterilized material containing no pathogenic organisms, and will reduce the impact of the treated sludge upon the ocean environment if ocean disposal is permitted to continue. This process will also constitute a logical initial treatment step if disposal on land or by incineration is adopted in the future.

(12) Sludge Supernatant Treatment Plant

The liquid supernatant from the thermal sludge conditioning process contains a high concentration of organic material and is to be separately treated by a pure oxygen activated sludge supernatant treatment plant before being returned to the Head End Facilities to be mixed with the incoming sewage. This treatment plant would have a capacity of approximately 3.5 M.G.D.

(13) Treated Sludge Settling and Sludge Storage Tanks With Sludge Pumping Station

The sludge from the thermal conditioning process must be settled and stored before final disposal. It is planned to provide approximately six settling or decant tanks for sludge thickening and to construct additional sludge storage tanks which will provide capacity to store fourteen days sludge production at average conditions. The existing sludge storage tanks and sludge thickening tanks will be modified and utilized for a portion of the total sludge settling and storage capacity.

The existing sludge pumping station will be modified as required for pumping the stored sludge to final disposal. An additional sludge pumping station will be provided to pump sludge from the new sludge storage tanks.

(14) Landscaping, Paving, Fence, Land Development, Etc.

This item is self-explanatory.

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The Phase I construction is designed to be built around the existing treatment plant, so that during this construction period the Commissioners will continue to treat the sewage that enters into the plant with the existing primary system. When the Phase I construction is completed (estimated to be the end of 1978), the PVSC will then divert the flow from the existing primary plant to the new Phase I secondary plant, and Phase II construction will commence. Phase II consists of the destruction of the Commissioners' existing primary tanks, and the construction of the new primary clarifiers. The new primary clarifiers will consist of twelve rectangular tanks, each 90 ft. X 280 ft. long, with bridge type sludge collectors and skimmers, arranged in two sets of six, with a gallery between the sets. The gallery will contain a two-compartment influent conduit, piping, valves, primary sludge, scum, and other pumps, instruments, control centers, and other auxiliary items. The influent to each clarifier will contain a meter and control valve and will be divided into six branches, so as to evenly distribute the flow. Flow equalization to each tank will be computer controlled. The effluent will leave the clarifiers over weirs into effluent troughs, which in turn will discharge into effluent channels. These channels will convey the flow to a control chamber, and

hence via a two compartment conduit to the oxygenation tank gallery for distribution to the biological units. The primary sludge will be removed from each tank by means of six automatically controlled valves and conveyed to the wet well of the primary sludge pumps, and from the pumps to the thickener complex. Scum will be automatically pumped to the grease and scum incinerator.

In addition, under Phase II, the sludge dock and existing sludge facilities will be modified. Any additional new sludge facilities, such as dewatering or incineration, cannot be ascertained at this time, since we will require guidance from State and Federal officials. This must await the results of studies now being made, but which will be completed prior to Phase II construction. Whatever is decided upon, whether it be incineration, ocean disposal, etc., will be included in the Phase II construction program. Phase II will also include a vehicular bridge over Doremus Avenue, and will also include the additional parallel trunk sewer in the northern area of the district if it is decided it is needed at that time.

The cost of the Primary Clarifiers, bridge, sludge modifications, and ancillary requirements, but excluding any additional sludge facilities, is estimated at $50.53 million dollars (June 1974 dollars); the north parallel sewer and pumping station is estimated at about $80 million dollars. The cost of the final Sludge Facilities (if any) must await the final decision of the USEPA.

SPECIAL REPORT #2

PROGRESS REPORT ON PVSC WORK

1. Engineering and Administrative Coordinating Committee (EACC)

An EACC meeting was held December 10, 1974, primarily for discussion on the completed preliminary contract documents for the Secondary Facilities. Mr. Manganaro wrote a letter dated December 20, 1974 to PVSC, (copies to the USEPA and NJSDEP), indicating the urgent need to obtain comments and/or approval of these preliminary documents, in order to commence the final documents; without immediate approval of the completed documents, it will be impossible to meet the stringent schedules.

On December 27, 1974, Mr. Lubetkin wrote to both USEPA and NJDEP pointing out that the Commissioners' agreement with Mr. Manganaro required approval of preliminary documents before any payment could be made on any final documents. Mr. Lubetkin pointed out that there had been continual discussion on this work with both USEPA and NJDEP, so that they were familiar with the work, and he requested either comments or modifications or approval, so that the work could be completed on schedule (June 1, 1975).

Mr. Lubetkin followed this up with a telephone call on December 30 to Mr. Russell Nerlick of the NJDEP (Mr. Ricigliano was on vacation), and confirmed their conversation in a letter dated December 31, 1974. Mr. Nerlick promised that they would approve most parts immediately, but they had to hold some parts in abeyance pending further information. Mr. Lubetkin also spoke to Mr. K. Stoller of the USEPA and was assured that the approval letter was in the typewriter and would be sent shortly.

2. Infiltration/Inflow Studies

On August 12, 1974, the PVSC received word that their application for a Step 1 Grant in the amount of $2,274,157. to the USEPA had been approved. PVSC had also applied for a State grant in the amount of $454,831. on this $3,032,210. project, but as of the end of 1974 had not received it.

This work also includes studies on storm overflows to the Passaic River from the combined storm systems, as desired by the State and Federal Authorities.

A contract was awarded to Elson T. Killam Associates, Inc. on August 9, 1974 for this work, with an understanding that an interim report will be completed by May 30, 1975, with sufficient information for Federal and State authorities so that they could approve PVSC final plans and specifications on its secondary treatment. Elson T. Killam Associates sub-let portions of this work to Boswell Engineering Co. and Purcell Associates, so that the large area was broken into smaller sections which could proceed simultaneously. As of the end of 1974, it is estimated that 32% of this work is completed.

3. Head End Facilities

Administration and Control Building: The Engineer's Certificate of Completion has been filed for Contracts 431B, Electrical Work, and 431D, Plumbing Work. The remaining contracts, 431A and 431C, have not been closed out, since several punch list items remain to be completed.

Grit Facility: All major equipment has been installed. Plumbing, HVAC, and Electrical work is now in the final phase of completion. A preliminary check has been made on the operation of all prime equipment except the heating and ventilating, grinders, and pneumatic conveyor equipment.

Incinerator Facility: The work for this structure is practically complete, except for electrical work and the installation of the gas meter by Public Service. The conveyor air will be checked after heat is installed in the building.

Construction of the Grit and Incineration Facilities (Contract Series 430) is estimated to be 98 per cent complete.

4. Chlorination Facilities

Except for punch list items, these facilities are practically 100 per cent complete.

The chlorination system, following tests, was accepted December 30, 1973. Chlorination of the PVSC effluent was started May 15, 1974 and was completed September 15, 1974.

During the 1974 chlorination season, which was the first year PVSC did any chlorination, several problems developed, which have to be corrected, as follows:

(1) As we know, liquid chlorine has impurities which settle out in the evaporators as we gasify the chlorine. With the massive amounts of chlorine needed by PVSC, this "gook" builds up to the point that at the end of the chlorine season it was necessary to completely disassemble this equipment for cleaning. Although we can clean during shut down, adaptations and valves must be installed if we are to be able to properly clean this equipment while we continue to chlorinate. This will be done prior to May 15, 1975.

(2) During the disassembly for cleaning we found that pre-assembled welded equipment was distorted so that it required pre-bars and forcing to reassemble. This is unacceptable to PVSC and the contractor has been notified to modify this equipment in order that it may be disassembled for cleaning without forcing. We do not know at this time how long this will take.

(3) While we chlorinated at a low level (since sufficient chlorine was unavailable), we found that the steam generators would go on and off in rapid cycles and sometimes would not pick up fast enough after shut-off, so that liquid chlorine went from the evaporators to the chlorinators - a very dangerous situation. PVSC has ordered its engineer to redesign the controls so as to be able to operate at both high and low rates of input. It is expected to install the new controls with the wall and safety equipment as soon as we get approval. It is not recommended that we operate the system until the steam controls are modified. If we get rapid approval from the USEPA, this could be done prior to May 15, 1975.

Contract documents for the construction of the protective wall and the additional snifters were approved by PVSC and sent to NJDEP and USEPA for approval, together with a grant application on May 22, 1974 (Federal #340401-01-0 and State #185S). We have been informed verbally that approvals and an offer of a grant will be forthcoming shortly.

5. Environmental Assessment Statement

Work is proceeding on the required environmental assessment statement by the Environmental Assessment Council (EAC). EAC has communicated with NJSDEP to indicate that assimilation capacity, total quantity and quality of discharge, water quality, and hydrographic and hydrodynamic data of Newark Bay should be provided in order that evaluations may be made relative to the effect of PVSC's treated discharges into Newark Bay and New York Harbor. A meeting was held with representatives of NJSDEP on May 28, 1974; NJSDEP advised that the Mathematical Model of the Newark Bay complex had been received from its consultants. Although a copy of this Mathematical Model was to be submitted to PVSC, it has not yet been received. EAC reports that approximately 30 per cent of the work is completed.

The environmental assessment statement is required by the USEPA before they will issue the construction grant (Step 3) on the PVSC main project, and since PVSC will be making an application for grant on the main project in June 1975, any delay by the State of New Jersey on necessary information, such as a basin plan needed by PVSC to complete the environmental assessment, will be detrimental to the time schedule of the whole project.

6. Design of Proposed Sewerage Facilities

The contract documents for the treatment of the liquid portion of the sewage are being prepared by Charles A. Manganaro, Consulting Engineers (CAMCE) in house; the contract documents for sludge treatment and disposal of the solids portion of the sewage are being prepared by Elson T. Killam Associates (ETKA).

Progress to date on CAMCE work is as follows:

1. Construction schedule submitted to NJDEP, with breakdown of contract groups for possible segmentizing. Unfortunately, due to the new hydraulic levels, units will not be usable until complete Phase I of plant is built.

2. Conferences with held with computer manufacturers.

3. Conferences were held with manufacturers on variable speed control for waste sludge and non-potable pumps.

4. Visit was made to engineering facilities of Air Products Corp. and Union Carbide Corp., and conferences were held with their staffs with reference to their proposed Oxygenation System. Presented data reviewed.

5. Hydraulic computations for main flow throughout the plant continued.

6. Hydraulic computations for interim replacement of existing Pump No. 4 continued.

7. Drawings continued on Influent Pumping Station and Return and Waste Sludge Pumping Stations.

8. Layout and drawings continued on Effluent Pumping Station.

9. Layout and drawings continued on Dilution Water and Non-Potable Water Chamber of Effluent Pumping Station.

10. Drawings continued on Non-Potable Water Chlorination Facility.

11. Drawings continued on both alternatives for Grease and Scum Incinerator.

12. Drawings continued on Emergency Generating Station

13. Drawings continued on Final Clarifiers.

14. Drawings continued on Oxygenation Tanks.

15. Drawings continued on modifications to Newark Shaft.

16. Drawings continued on modifications to Newark Bay Tide Gate Chamber.

17. Drawings continued on existing facilities and existing outside piping.

18. Layouts and drawings continued on site work, grading and horizontal control.

19. Layouts and drawings continued on conduits and chambers.

20. Layout and drawings continued on Overflow Control Chamber.

21. Layouts and drawings started on Ventilation Houses and continued on Dehumidification Houses.

22. Layouts and drawings continued on Utility Tunnels.

23. Drawings continued on Operation and Control Board layouts.

24. Drawings continued on Plant Unit Graphic Diagrams.

25. Layouts continued on Oxygen Production Facility.

26. Drawings continued on process and instrumentation diagrams for Final Clarifiers, Oxygenation Tanks, Return and Sludge Pumping Station, Scum and Grease Incinerator, Influent Pumping Station and Effluent Pumping Station, and started for Primary Clarifiers.

27. Layouts and drawings continued on heating and ventilation for the Maintenance Building, Influent Pumping Station, Return and Waste Sludge Pumping Station, Emergency Generating Station, Grease and Scum Incinerator, Oxygenation Compressor Building and Effluent Pumping Station.

28. Layouts and drawings continued on plumbing for Maintenance Building, Galleries and Influent Pumping Station.

29. Layouts and drawings continued on heating, ventilation and dehumidification for galleries and tunnels.

30. Layouts and drawings continued on electrical one-line diagrams, conduit layout and schedules for power and control systems on Oxygenation Tanks, Oxygenation Compressor Building, Influent Pumping Station, Final Clarifiers, Scum and Grease Incinerator, Return and Waste Sludge Pumping Station, Emergency Generating Station, Tunnels, Maintenance Building, Main Pumping Station and Non-Potable Water Chlorination Building.

31. Lighting layouts and drawings continued on Maintenance Building, Emergency Generating Station, Oxygenation Compressor Building, Influent Pumping Station, Tunnels and Galleries, Return and Waste Sludge Pumping Station and Effluent Pumping Station.

32. Layouts and drawings continued on electrical substations, transformer substations, and feeder system.

33. Work continued on overall plant control system and instrumentation.

34. Work continued on River Monitoring System.

35. Work continued on examining existing regulator sites, and on new regulator system.

36. Computer specifications continued.

37. General specifications continued.

38. Specifications on first contract continued, and started on additional contracts.

39. Structural design continued on Oxygenation Tanks, Return and Waste Sludge Pumping Station, Influent Pumping Station, Chlorine Contact Tank, Final Clarifiers, Scum and Grease Incinerator, various conduits and chambers, Emergency Generating Facility and Effluent Pumping Station, and started on Overflow Control Chamber.

40. Structural drawings continued on Oxygenation Tanks, Influent Pumping Station, Return and Waste Sludge Pumping Station, Chlorine Contact Tank, Final Clarifiers, Scum and Grease Incinerator, and Emergency Generating Facility, and started on Overflow Control Chamber.

41. Architectural drawings continued on Maintenance Building, Emergency Generating Station, Scum and Grease Incinerator, Influent Pumping Station, Return and Waste Sludge Pumping Station, Oxygenation Compressor Building, Effluent Pumping Station and Non-Potable Water Chlorination Building, and started on Ventilation Houses.

42. Design and drawings continued on interim electrification of Pump No. 4, including removal of old grit and screening facilities and additional parking lot.

43. Specifications continued on electrification of Pump No. 4.

Progress to date on ETKA work is as follows:

(1) Sludge Heat Treatment Building: structural design of basic framing continued; development of architectural elevations continued; conferences with representatives of J. wis Goodfriend regarding acoustics and vibration control; conferences with representatives of Morrison, Zimmer, Borton & O'Connor regarding heating and ventilating facilities; conferences with representatives of Zimpro in Millburn; and conferences with Barber-Colman representatives regarding alternative heat treatment equipment. As a result of this conference, sludge samples were transmitted to California for further testing.

(2) Overall Plan: work on Design Report continued; and progress on preliminary site plans continued.

(3) Supernatant Treatment Facilities: layouts continued to progress; studies regarding heating, ventilating, and electrical work for this facility continued; and conferences with representatives of Union Carbide in Millburn.

(4) Thickener Facilities: grit and screenings handling facilities developed; structural basics developed; and architectural elevations and floor plans developed.

(5) Instrumentation: data collection of instrumentation requirements continued; schematic drawings progressed; and conference with Zimpro instrumentation expert in Millburn.

It is estimated that the preliminary contract documents (CAMCE and ETKA) are 82 percent completed.

As indicated before, a set of preliminary contract documents was forwarded to PVSC, EPA and NJSDEP on December 10, 1974.

7. Segmentizing

In view of the magnitude of the work for the PVSC secondary facilities, and since EPA regulations permit segmentizing of the project to lessen the financial impact on grants, a plan was developed (and sent to NJSDEP for approval) comprising 19 contracts (14 for CAMCE work and 5 for ETKA work) which, when constructed, would provide for an operable secondary facilities plant without primary clarification. The total construction cost of this work, based upon June 1974 dollars, is $272,200,000. The engineering design is scheduled to be completed by May 1975; however, as indicated in paragraphs 1 and 5, work will be hampered by any delay in the approval of the preliminary contract documents and by the delayed approval of the outfall system.

8. River Monitoring and Computer Application

Work is continuing on computer equipment, river monitoring, customer metering, billing systems, interceptor gradients, system pumping stations, plant processes, and industrial monitoring systems:

(a) Several additional field visits were made of the Passaic River (Great Falls to Newark Bay) for the purpose of establishing a preliminary location for the river monitoring stations.

(b) A velocity survey was made of several river cross-sections to optimize the selection of the location of the sampling probes for the river monitoring stations.

(c) The locations of the monitoring stations have been established.

(d) A draft report on the river monitoring stations has been completed.

9. Industrial Waste Survey

In order to be eligible for Federal and State grants, PVSC has promised to institute an Equitable Rate Cost Recovery System. The purpose of such a system is to have the industries which use the PVSC facilities pay for such use, and thus not burden home owners with taxes which are used to support the treatment of industrial wastes. In order for this to be effective, all parameters which affect the cost of treatment must be considered; thus industries may be required to pay not only for the volume of waste discharged, but also for excessive strength where applicable.

The Commissioners will also require pretreatment for those industries which discharge wastes that cannot be properly treated by the proposed new PVSC facilities, or wastes which are dangerous or hazardous to the sewers, men working therein, or the treatment facilities.

In order to determine a proper formula for the Equitable Cost Recovery System, and in order to determine where and to what extent pretreatment is needed, the Commissioners have embarked upon a Waste Effluent Survey. PVSC has completed a list of all industries within the jurisdictional area, showing the total water purchased (in 1971) and the volume of water discharged into the sanitary sewer system on the basis of million gallons per year.

Following is the status of the Industrial Survey as of December 31, 1974:

(a)	Total survey forms hand-delivered and sent by certified mail	3,547
	Less forms returned due to moving, out of business, etc.	385
	Total survey forms out	3,162
(b)	Survey forms returned to PVSC:	
	(1) Active: Completed forms with characteristics of an industrial waste effluent	434
	(2) Non-Active: Completed forms indicating no industrial waste effluent	2,683
(c)	Survey forms not yet due from industries	6
(d)	Delinquent industries that had not yet responded to PVSC letter:	7
(e)	Industries with partially completed forms	32

10. Sludge Management Program

In the acceptance of the PVSC application for the Step 2 grant, EPA required under Grant Condition No. 6:

> "The Grantee shall develop an acceptable sludge management program to eliminate ocean disposal and shall cooperate in the cost of program development with EPA in exploring cooperative and joint solutions with other operating agencies. The program is to be fully developed and submitted for the approval of NJSDEP and EPA by June 30, 1976, and is to provide for operation of the program by June 30, 1977."

To initiate the required program, an outline for the preliminary design was forwarded to EPA and NJSDEP on December 12, 1973. This program was accepted by EPA (April 15, 1974).

In view of the present regulations relative to sludge disposal, a letter was forwarded by ETKA dated April 29, 1974, requesting permission to use a single manufactuer, Zimpro, Inc., for the wet air/oxidation process. To date, no reply has been received.

11. Acquisition of Land

Negotiations are continuing for the purchase of land required for the proposed secondary facilities.

Special Report #3 - (From March 1974 Report)

Crack Repair Under McCarter Highway

We were certainly glad when the month of March was over. The month started with problems; they then went from bad to worse, but we are finally recovered.

In order that you may understand what happened, you must go back in time to April 1973, when the PVSC personnel investigated the reason for a large depression developing in the concrete roadway of the northbound lane of Route 21 Freeway.

On April 9, 1973, an internal inspection was made of the PVSC 10'-10" diameter interceptor via the manhole at the point of depression. Since the sewage level was approximately seven feet, this inspection was confined to visual observations from a platform which had been suspended in the manhole. Cracks were seen in the crown of the interceptor, both upstream and downstream of the manhole, and cracking was also observed in the barrel of the manhole at the intersection of the barrel with the crown of the interceptor. Based on these observations, it was deemed necessary to make a more thorough internal inspection which would involve by-passing of sewage so as to lower the water level in the interceptor.

This was done on April 16, 1973 when,at approximately 3 A.M., the water level in the sewer was brought down to 3 feet by diverting sewage into the Passaic River at Yantacaw and Newark. An inspection team, including a photographer, examined and evaluated approximately 6,200 feet of trunk sewer.

This examination disclosed that, with the exception of approximately 151 feet around the manhole at Riverside Avenue, Newark, the sewer was in good structural condition. However, there was a huge pile of debris south of Herbert Place, Newark, and, of course, there were longitudinal crown cracks extending approximately 75 feet north of the manhole to 76 feet south of this manhole, in addition to some random transverse cracks at the Riverside Avenue manhole.

The original sewer was constructed in 1915 as a tunnel through a fine red sand,with ground water elevation about 9 feet above the crown of the sewer, so that the forces were as follows:

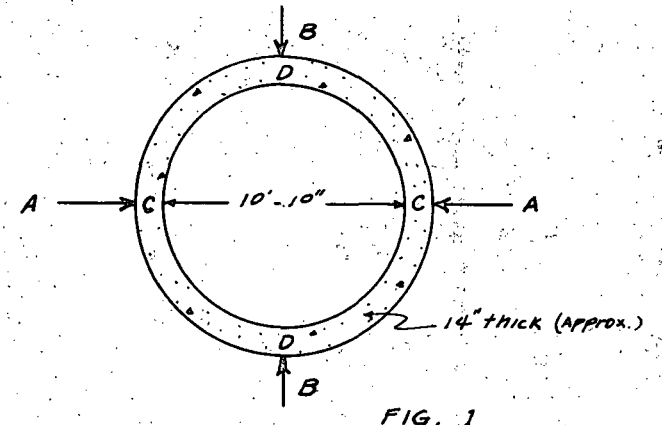

FIG. 1

You will note that forces A tend to support the non-reinforced concrete sewer, while forces B tend to crush the sewer.

When the cracks developed, the side supporting sand migrated into the sewer, and points C moved out allowing points D to come together.

Measurements taken in the circular 10'-10" diameter sewer on April 16, 1973, indicated that the vertical diameter was 10'-4" and the horizontal diameter was 11'-4 1/2" at the worst point , showing that the sewer had started to collapse, as follows:

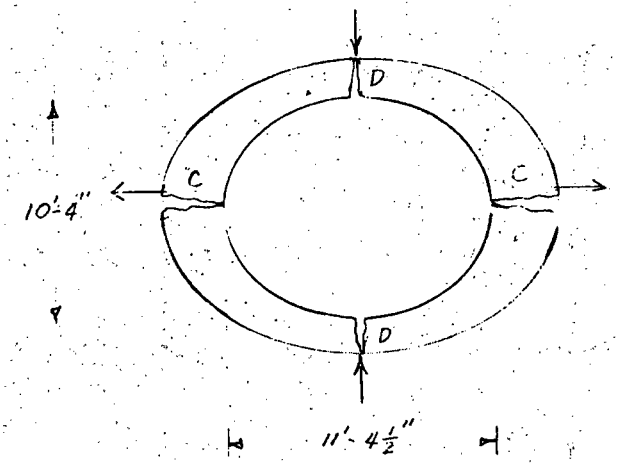

Figure 2

Various methods of repair were investigated, some requiring more time than others, and a second inspection was made on Sunday, October 14, to take more detailed measurements (information needed for the repair specifications). It was found that the sewer had deflected an additional 3 inches, and with this information conferences were held with the U. S. Environmental Protection Agency and the N. J. Department of Environmental Protection on October 23, 1974.

The obvious method of repair involved the by-passing of sewage for approximately 1 month. Mr. Manganaro, Consulting Engineer, was directed to prepare specifications for the repair, and simultaneously to investigate and report on all alternate repair methods. Dr. James Gould of Mueser, Rutledge, Wentworth & Johnston, and Mr. Norman Nadel of MacLean, Grove & Company, soil and tunnel experts, were hired to review the data and photographs, and in a letter to Charles Manganaro, they reported that the magnitude of movement within the last six months was alarming, and although impossible to predict with certainty the time which would be involved before total collapse, they felt work should commence immediately on internal repairs.

Now picture the Commissioners' dilemma. They were presented with a report concerning a section of their main trunk sewer that was in imminent danger of collapse. If it did collapse before remedial measures, not only would the whole highway cave in, (both north and southbound lanes), but there would be a back-up and flooding of sewage into homes and cellars in a large area, causing real public health problems, besides the stink and mess of attempting to clean up after things were again under control. In addition, there would be no choice but to by-pass to the river and during the 3 or 4 month period this by-pass was being constructed, the mess would be awful. In addition, the massive traffic jams caused by the complete closing of Route 21 Freeway was not one that was happy to contemplate.

This was the situation facing the Commissioners, and they knew that whichever way they chose, there would be criticism. Damned if they did, and damned if they didn't.

One of the easiest things in the world is to criticize. To be a Sunday morning quarter-back and second guess all decisions, may be satisfactory to some, but makes the poor unfortunate who must make decisions on the "firing line" feel pretty low. But even more frustrating is when the correct (although difficult) decision was made and the game won, we find we are still objects of criticism from those that know not the facts and are not even interested in finding out the truth. The ease with which some can orate and attempt to become self-appointed judges and juries to condemn without a fair evaluation of the facts and evidence, smacks of "vigilante" law, which, thank God, intelligent people avoid.

However, the people in the PVSC area have much thanks to give about the fair reporting done by the newspapers on this subject, and the wise, although difficult decisions made by the USEPA and the NJDEP on this matter, and particularly in the officials not letting themselves be stampeded by a small but vociferous few which advocated delay.

The PVSC and their consultants held further meetings with the USEPA, NJDEP, N. J. Department of Transportation, U. S. Corps of Engineers, City of Newark, and the Department of Labor and Industry, where the various ramifications of the collapsing sewer and its repair were discussed. It was finally decided, by all concerned, that despite the fact that by-passing to the river was undesirable, the possibility of total collapse and the short time to do the work necessitated the by-passing to the river for a period of 23 days.

Although the time factor was the important consideration (the sewer could be repaired within four months, as compared to 1.3 years by putting in a temporary pumping station), there were other significant factors, such as:

(1) Even the temporary pumping station would require possibly 5 days by-passing while bulkheads were built and removed. Thus, we were talking about a difference of 18 days by-passing.

(2) There was approximately 150 cubic yards of rubble south of the Herbert Place connection which could be removed while the internal repair with by-passing was being done. We could not clean this section if the temporary pumping station was built.

(3) The remaining sewer to the Newark Bay Pumping Station could be given an internal inspection and an infiltration/inflow analysis could be made which could only be accomplished by total by-passing at another date.

Incidental to the above was relative costs. It was then estimated that the internal repair would cost $1.6 million as opposed to $4.2 million for the temporary pumping station method of repair. Incidental to this was also the fact that the temporary pumping station would consume approximately 39,000 gallons of fuel oil with attendant air pollution and noise, but the important factor was that waiting was too dangerous.

Therefore, it was the consensus of those making the recommendation and decisions, and I wish to report the opinion was unanimous (Federal, State and PVSC), to make the repair in the fastest practical time by allowing by-passing into the river during the month of March.

The plan seemed simple. After building a bulkhead to keep the sewerage out of the break area, 10-ton jacks were to be placed at 5 ft. intervals to support the sewer while the scum was cleaned from the walls and the cracks caulked to stop any small leaks (see Figure 3). Steel liner plate was next to be installed, being held in proper place with sand bags (see Figure 4).

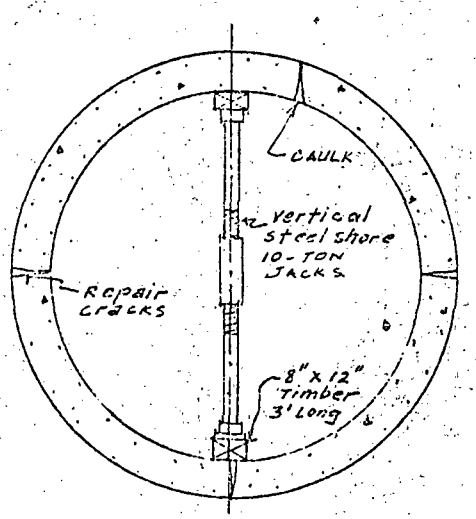

FIG. 3

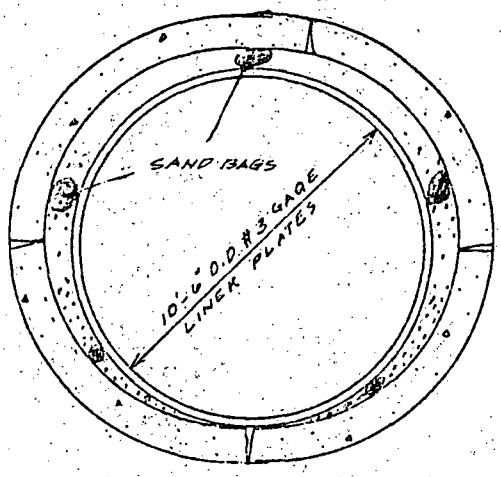

FIG. 4

The space between the old sewer and the steel liner plate was then to be pumped full with grout (see Figure 5). Next holes were drilled thru the concrete sewer and grout was to be pumped into the spaces around the sewer for lateral support and to fill some of the voids that had been created (see Figure 6). Then followed deep drilling and the pumping of grout further around the sewer and filling the remaining voids (see Figure 7). Then steel wire mesh was placed over the steel liner plate and the whole surface was gunnited with a liner of dense concrete, thus protecting the steel (see Figure 8).

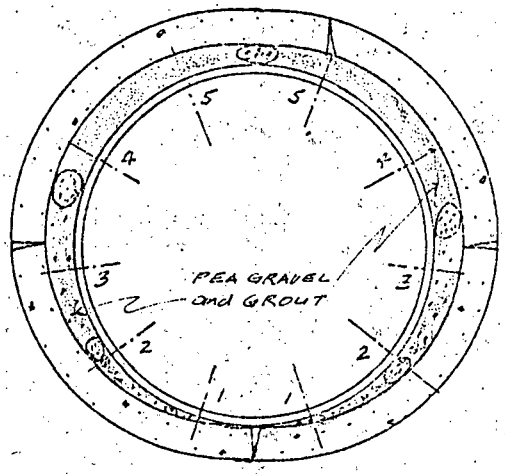

FIG. 5

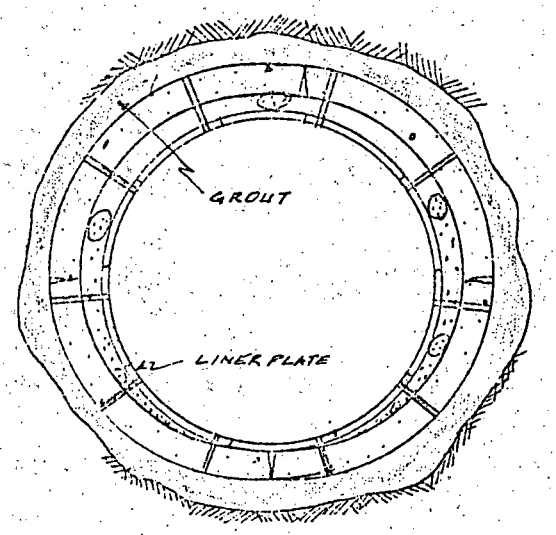

FIG. 6

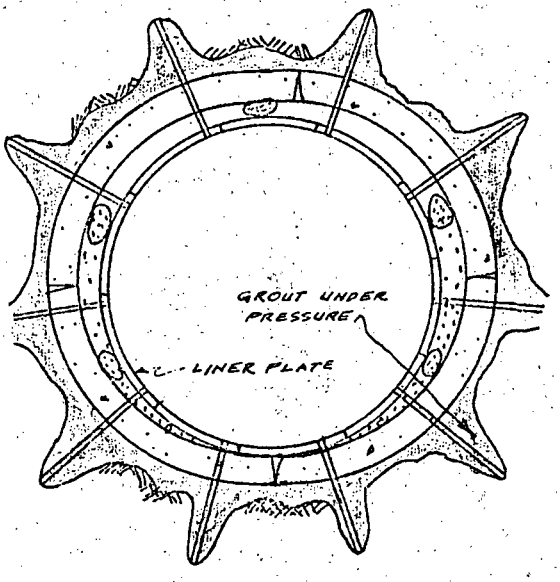

FIG. 7

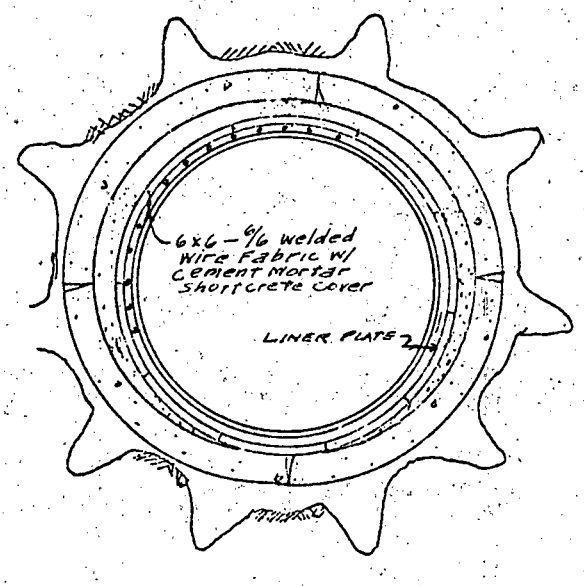

FIG. 8

At least, that was the way it was supposed to work, but several things happened. First, while re-building the manhole and re-routing traffic, the pavement slab started to bounce with the traffic, just as a beam supported on both ends flexes when a weight is put in the middle. The contractor was ordered to immediately pump grout under the slab to fill the voids and maintain stability.

The second, and most scary of the unscheduled events occurred after the jacks were installed and the sewer dewatered. The fine sand surrounding the sewer started to come into the invert crack at a rapid rate and the sewer collapsed further as the lateral ground support gave way, so that three of the ten ton jacks were bowed. After consulting with soil experts, the engineer ordered an immediate evacuation of the sewer and filling the sewer with water to attempt to equalize pressures and reduce the rate of soil migration. The contractor was then ordered to install a well point system to dewater the ground around the sewer so as to stabilize the soil. In other words, without water the soil would not flow into the sewer through the cracks,which by now were quite large (measuring over 20" deep and 3" to 4" wide in places).

During the planning stage, the dewatering of the ground around the sewer had been considered, but since it would create additional load on the cracking sewer (300 pounds per square foot additional), it was thought that this additional work was not warranted. Also, all inspections to date did not indicate a large flow of infiltration and there was no reason to believe that the sewer cracks seen in the inspections could not be caulked with steel wool as was the Gouverneur Street job. In view of these facts, the engineer did not specify well-points and would have prohibited them until the critical situation showed they were needed. In fact, it can only be conjecture as to whether the sewer would have failed with the additional load imposed by well points if the jacks and shores were not already in the sewer to help support this additional load.

The Engineer also ordered ten additional 20-ton jacks and additional supporting bents in the sewer.

After the well points were installed (with approximately 260 cubic yards of course sand for the 37 wells instead of a normal 75 cubic yards) and the ground dewatered, the sewer was again drained and entered. It was found that approximately 25 cubic yards of material had entered the sewer through the cracks, but the well points were then controlling the situation.

With the additional jacks and timber bents supporting the now multi-cracked assemblage of concrete which we called a sewer, there was a mad rush to install the steel liner plate, bending it to conform to the shape of the sewer rather than reduce the size. Jacks were removed, one at a time, and reinstalled over the liner plate. The back grouting behind the liner was placed after two complete liner plate rings were installed, rather than a run of 8 rings, as specified in the contract documents, thus slowing the work, but making it safer and surer.

Finally, on Wednesday, April 2, work on the internal sewer repair was completed and everybody breathed a sigh of relief. The bulkheads were removed and at 7 A.M. on Friday, April 4, we stopped the sewer by-passing which was necessitated by this repair work.

In retrospect, it was obvious that any further delay would have been catastrophic to our sewer, the surrounding highway, and

to residents which would have been affected by cellars of sewage. We were fortunate that State and Federal officials allowed the PVSC to move with dispatch, that PVSC moved as fast as it was allowed, and that we had an experienced contractor who reacted to emergency situations rapidly in order to complete the work with a minimum of pollution and delay.

We ended up with a 9'-10" sewer (although out of round in the critical area with a repaired length of about 180 feet). The 150 cubic yards of material was removed from the Herbert Place area and other debris of various magnitude was removed from other parts of the sewer. Inspection also revealed the remaining sewer from the break area to the Newark Bay Pumping Station was in satisfactory condition.

It is believed the cracking was initiated by the pounding of heavy trucks driving over the manhole, with the manhole transmitting the shock to the sewer. The reconstructed manhole was redesigned so that the frame is held by the highway slab and a gap will prevent any impact shock from being transmitted to the trunk sewer.

Our inspection did reveal that a similar thing had started at Clay Street where the manhole was cracked badly. Luckily the sewer was still in good condition. The PVSC next had the Clay Street manhole reconstructed with the same design so as to prevent transmission of shock.

The effect of the by-passing on the river was not as bad as anticipated by some. We were lucky in that we had cold weather, and measurements indicated that the dissolved oxygen in the river did not go below 6 mg/liter (well above any requirements for this stream), even toward the end of by-passing. Checks with the overflow indicated that with lower velocities much of the suspended solids settled temporarily in the sewer, and with the rains and large flow, the stream recovered rapidly after the halting of the by-passing with no measurable after-affects.

We hope the recitation of the facts in this case will explain to the people who still criticize PVSC, the problem that was encountered, and we hope that when they know all the facts they will understand why decisive action had to be taken and why the PVSC did as they did. We are not perfect. We make mistakes and for these we are sorry, but we could not afford the luxury of a mistake of inaction. The PVSC did what it thought should be done, and we believe that subsequent occurences and results proved us correct. We are only sorry that we were unable to get to each and every person and show him the dilemma.

Special Report #4 - (From October 1974 Report)

Some Problems With Water Pollution Legislation

As we read PL 92-500, The Water Pollution Control Act of 1972, we are amazed at its vast scope, and if we are an ecologist, we breathe a sigh of relief ... at last we will get help from Washington. As we read more and more of the Act, we are amazed at the details and we may begin to wonder if such specifics could apply equally across such a large country with such vastly different problems. If we are taxpayers, we wonder what the cost will be, but we are assured that socio-economic factors are to be taken into consideration, and since we know something must be done about pollution, we breathe a prayer and say "so be it". The country was disgusted with air and water problems and their apparent abuses. The problem apparently was not being solved on a local or state level (although in many cases this was not true), so PL 92-500 was passed with public acclaim and backing. In a few years with its failures and tremendous costs, when the public will be looking at runaway inflation, higher costs, taxes, etc., and lower amount of spending money available, I wonder how many will still bless the law ... that is if they know what the law is costing and how much of what is being spent may be wasted money which accomplished little or nothing of ecological value.

Lest I be misunderstood, let me say that I think the intent of the law was excellent. The country did need this problem to be controlled at the Federal level rather than in local jurisdictions in many cases (not all cases). The law has many wonderful factors and ideas that took a great deal of time for many wise men to conceive; however, at some point the legislators went too far by being too specific in too many points. The pendulum had swung too far, since the act restricted application of local knowledge and discretion, and items labeled "Guidelines" were in reality regulations that are strictly applied equally to all, regardless of the waters effected or the circumstances involved. As an analogy, it was as if someone had said that automobile speed limits in a city should not exceed 35 M.P.H.; therefore, a federal law is passed restricting speed limits within municipalities to 35 M.P.H., forgetting that many municipalities have extended boundaries and high speed thruways within such boundaries. The point I am making is that detailed specific legislation covering broad areas can cause more problems than it solves, and Congress instead should pass general laws with specific required achievements and leave it to the Regional Administrator to direct on how the achievements are to be met on a case by case basis.

Two years of experience with the law has, in my opinion, demonstrated that some parts should be changed. The following comments indicate the parts of the law that I think should be changed, together with my reasons. Where a part of the quoted legislation (in italics) is put in brackets ( ), I feel these words should be deleted. The part that follows, which is underlined, is what I feel should be added.

Section 101(a)(1) - It is the national goal that the discharge of harmful amounts of pollutants into navigable waters be eliminated by 1985.

I believe the effect of almost any material can be a pollutant in large enough amounts and similarly almost any material can be assimilated in receiving waters in small enough amounts without any ecological harm. This must be recognized, since a literal interpretation or the original wording is not practically nor economically achievable, nor do I believe even desirable, when we consider the total effect on the environment. I am making no comments on the date, many others have said enough.

Section 101(f) - It is national policy that to the maximum extent possible the procedures utilized for implementing this Act shall encourage the drastic minimization of paper work and interagency decision procedures, and the best use of available manpower and funds, so as to prevent needless duplication and unnecessary delays at all levels of government.

This is one of the best parts of the Act. Too bad it appears so difficult to implement.

Section 105(d)(1) ... to eliminate the discharge of harmful amounts of pollutants ... of runoff of harmful amounts of pollutants...

See remarks on Section 101(a)(1)

Section 201(b) - Waste treatment management plans and practices shall provide for the application of the best practicable waste treatment technology required for the particular receiving water to achieve the intent of this act before any discharge ... and shall provide for consideration of advanced waste treatment techniques where necessary.

I believe we must recognize the differences in the receiving waters. The ocean, without deleterious effect, can assimilate more than a river, and the large rivers in turn, can assimilate morethan a small lake. We must utilize this capacity if we are to accomplish our goals in a reasonable time and cost.

Section 201(g)(2)(A) - The Administrator shall not make grants ... best practicable water treatment technology required for the particular receiving water over the life of the works ...

See previous comments. We must utilize assimilation capacities of receiving streams.

Section 201(g)(2)(B) - as appropriate, on a case by case basis, the works proposed ... eliminate the discharge of pollutants in harmful amounts.

See previous comments. The Administrator must be able to judge each case on its own merits.

Section 201(g)(3) - The Administrator shall not approve any grant ... unless the applicant shows ... that each sewer collection system discharging into such treatment works is (~~not subject to excess infiltration~~) being studied to determine if excess infiltration exists and will submit a plan to eliminate such excess infiltration if it exists.

This change will allow construction to start as soon as practical without the long delay that can be encountered in a very complex system, while waiting for the completed report on infiltration. At present, delays are more expensive and harmful than possible errors of overbuilding. The only harm overbuilding will do is have a longer life treatment plant -- at a cheaper price. Again, the Administrator should be given discretion on a case by case basis.

Section 204(a)(6) - That no specifications for bids in connection with such work shall be written in such a manner as (~~to contain proprietary, exclusionary, or discriminatory requirements other than those based upon performance,~~) not to allow equal equipment to be used, unless such requirements are necessary to test or demonstrate a specific thing, or to provide for necessary interchangeability of parts and equipment (~~, or at least two~~) . A brand name(~~s~~) or trade name(~~s of comparable quality or utility are listed and are~~) may be used to demonstrate the quality and type of equipment needed, however; when this is done it shall be followed by the words "or approved equal".

I deem this to be so important that I have made a Special Report entitled "Two Brand Names or Equal", But Are They Really?", which explains this matter. This Special Report follows this report.

Section 204(b)(1) - ... the Administrator shall not approve any grant ... unless ... applicant ... has adopted or will adopt a system of charges to assure that each large industrial recipient of waste treatment services ... will pay its proportionate share of the costs of operation and maintenance ... A system of Ad Valorem taxes plus surcharges for the larger or unusual users may be acceptable if, in the opinion of the Administrator, such a system is fair.

I believe the additions above are absolutely necessary so we are not expending more money than we recover in attempting to bill each small user a small amount. It would cost more to measure or monitor each home, if literal application is made of the existing law. At least by restricting this to large or major users, it could be made cost effective. The "Ad Valorem taxes" method of payment of "normal" sewage is the easiest the most economical way of handling large industrial complex areas and the "surcharge" for strong, unusual or large quantity waste makes this equitable. Why can't the Administrator have discretion on the method, as long as the final results are fair and achieve the intent of the legislation.

Section 204(b)(2) - The Administrator shall ... issue guidelines applicable to payment of waste treatment costs by industrial (~~and non-industrial~~) recipients of waste treatment services (~~which shall establish ... various treatment works serving municipal industrial communities~~). However in the actual application of such guidelines, a fair equitable system shall be set up on a case by case basis, including only those items necessary so as to make the system cost effective and reasonable so as to give the public maximum benefit.

The purpose is to make the legislation less specific and give the Administrator more latitude in allowing sewer authorities to establish a fair and reasonable cost recovery system which will reflect their individual problems and give the public the greatest

benefit. Obviously, a system of cost recovery that may be correct for a small system may be ridiculous in a large complex system. It is important that even specifics such as strength, volume, and delivery flow rate not be mandated, since any one of these may not apply to a specific situation, but may be very applicable to other situations.

Section 301(b)(1)(A) - not later than July 1, 1977, effluent limitations for point sources ... which shall require the application of the best practicable control technology (~~currently available~~) necessary for the receiving stream as (~~defined~~) established by the Administrator ... or in the case of a discharge into a publicly owned treatment works ... shall require ... with any applicable pretreatment (~~requirements~~) necessary so as not to degrade the receiving waters...

Here again we should be less specific in our legislation and give the Administrator more latitude so that we do not waste money by overtreatment in one type of water, and still be able to enforce stringent requirements where necessary.

Section 301(b)(1)(B) - for publicly owned treatment works ... for which construction must be completed (~~within four years~~) in accordance with a schedule approved by the Administrator, effluent limitations based upon (~~secondary treatment~~) criteria established by the Administrator for the particular receiving waters involved (~~as defined by the Administrator of this Act~~);

The construction schedule of four years may not be practical in large plants. For example, an existing large plant may require certain facilities to be built around the plant, maintaining flow,and only after these are completed and flow transferred, could the remaining old part be rebuilt. Such a schedule could take 6 to 8 years. By allowing the Administrator to set schedules on each individual basis, large projects are not penalized. Also, because of the necessity of spreading out available funds, segmatized parts of a plant could be built with the remainder at a later date when further funds are available.

Again, I feel that the effluent limitation requirement should be flexible and at the discretion of the Administrator, taking into account the assimilative capacity of the receiving waters.

Section 301(b)(1)(C) - not later than (~~July 1, 1977~~) scheduled date of compliance set by the Administrator, any more stringent limitations, including ...

I believe everyone agrees that the 1977 date is unrealistic.

Section 301(b)(2)(A) - not later than July 1, 1983 effluent limitations categories ... toward the national goal of eliminating the discharge of (~~all~~) harmful amounts of pollutants ... shall require the elimination of discharges of(~~all~~) harmful amounts of pollutants ...

See Section 101(a)(1) comments.

Section 301(b)(2)(B) - not later than (~~July 1, 1983~~) scheduled dates of compliance set by the Administrator, compliance by all publicly owned treatment works ...

The date may be unrealistic considering funds available, complexity of construction, etc., in very large projects. The result is that these projects, which need help the most, may be made ineligible for grants because they cannot meet the unrealistic date.

Section 301(c) - ... toward the elimination of the discharge of harmful amounts of pollutants.

See Section 101(a)(1) comments

Section 303(e)(3)(A) - effluent limitations and schedules of compliance at least as stringent as those required by Section 301(b)(1), Section 301(b)(2), Section 306, and Section 307 (~~, and at least as stringent as any requirements contained in any applicable water quality standard in effect under authority of this section~~);

Deletion of the last part makes this more realistic and avoids arguments as to whether a very strict requirement in a small stream is applicable to a discharge in a different type of water.

After Section 304(a)(3), add a section as follows:

Section 304 (a)(4) - The criteria and information shall reflect, where applicable, the assimilative capacities of various receiving streams, estuaries, and the ocean, to the extend that criteria developed for one type or size of water may not be the same as for another type or size of water.

Section 304(b)(1)(B) - specify factors to be taken into account, including the assimilative capacity of the receiving water, in determining the control ... assessment of best practicable control technology (~~currently available~~) required for the particular receiving water to comply ...

The reasons have been discussed in previous comments.

Section 304(b)(2)(B) - specify factors to be taken into account including the assimilative capacity of the receiving water, in determining the best measures ... assessment of best available technology required for the particular receiving water shall ...

To be consistent with previous recommendations.

Section 304(b)(3) - identify control measures ... to eliminate the discharge of harmful amounts of pollutants ... (~~taking into account the cost of achieving such elimination of the discharge of pollutants.~~)

See Section 101(a)(1) comments. The deletion could now be made since we are talking of harmful amounts and their cost is a secondary consideration.

Section 304 (d) (1) - The Administrator ... shall publish ... information ... on the degree of effluent reduction attainable through the application of secondary treatment. It must be understood that where the Administrator deems the receiving water such, that less than the reduction attainable, will satisfactorily meet the water quality required then,at his discretion, for those particular waters he may set discharge requirements which may be lower than the reduction attainable through the application of secondary treatment.

This is one of the areas where I feel that the Administrator needs discretion so that we do not spend much needed money in areas not needing this degree of treatment. There could be a secondary treatment of less than maximum attainable, at a much cheaper cost, that would be perfectly satisfactory in a particular receiving water.

Section 304 (f) (1) ... guidelines for pretreatment of harmful amounts of pollutants ... Guidelines ... shall be established to control and prevent the discharge ... of the harmful amounts of any pollutant...

This is necessary so as to not require expensive pretreatment where it serves no purpose except to spend money and utilize power where discharges are made to waters that can easily assimilate them. As an example, the removal of Phosphates or Nitrates in small streams or lakes is very important, but such removals into the ocean or large estuaries could even be considered detrimental.

Section 305 (b)(1)(C) an analysis of the extent to which the elimination of the discharge of harmful amounts of pollutants ...

See Section 101 (a)(1) comments

Section 306 (e) After effective date of standards of performance ... it shall be unlawful ... to operate such source in violation of any standard of performance applicable to such source. However, the Administrator may set a standard for a particular source which is less than the standard of performance provided that the receiving water can assimilate such discharges without harmful effect.

Again it is important that we do not arbitrarily set a very restrictive standard equally to all industries regardless of the receiving water. What may be correct in one area, may not be correct in another and the Administrator needs to be able to use discretion.

Section 307 (a)(1) The Administrator shall ... publish ... a list which includes any toxic pollutants ... The Administrator ... shall take into account the toxicity of the pollutant ... effect of the toxic pollutant on such organisms (.) , and the assimilation and/or dillution capacity of the receiving water.

I believe this addition is self explanatory and would be used in certain biodegradable toxic pollutants in limited amounts.

Section 307 (b)(1) The Administrator shall ... publish proposed regulations establishing pretreatment standards for introduction of pollutants into treatment works ... for those pollutants which are determined not to be susceptible to treatment by such treatment works or which would interfere with the operation of such treatment works. ... Pretreatment standards under this subsection ... shall be established to prevent the discharge of harmful amounts of any pollutant through the treatment works ... or otherwise is incompatible with such works. In applying the pretreatment standards to a particular industry, the particular receiving water and treatment plant shall be considered and the Administrator may apply a less stringent standard provided the receiving water can assimilate such discharge without harmful effect.

See Section 306 (e) comments

Section 307 (c) ... Such pretreatment standards shall prevent the discharge of the harmful amount of any pollutant.

See previous comments.

Section 402 (b)(8) To insure that any permit for a discharge from a publicly owned treatment works includes conditions to require adequate notice to the permitting agency .. Such notice shall include information on the quality and quantity of effluent to be introduced into ... such publicly owned treatment works. When setting regulations concerning this, the Administrator shall recognize the different types of problems encountered with different size plants and the requirement shall be practical for the specific size and type plant reporting.

This is important since some of the regulations set up require reporting of very small items (10,000 gal/day) which is very practical in smaller plants but are not even measurable in large plants (250 Million Gallons Per Day), however, the Administrator claims lack of discretion even though data asked for is impossible to measure.

I realize that even after making the requested changes in this legislation that further experience may indicate other changes are still necessary. However, I feel that at this time these changes are necessary in order for us to progress more rapidly, efficiently and economically in the direction of cleaning up the pollution in our waterways. I do not pretend to have caught all changes that should be made and these suggestions should be considered supplemental to suggestions made by others rather than replacing them.

I feel rather strongly about the change of Section 204 (a)(6) to such an extent that I have written a special report on this item entitled, "Two Brand Names Or Equal,But Are They Really" which follows.

SPECIAL REPORT #5 - (FROM OCTOBER 1974 REPORT)

"TWO BRAND NAMES OR EQUAL", BUT ARE THEY REALLY?

It has been said that a wise benevolent dictator is the most efficient form of government. The man at the top can make quick relevant decisions without the necessity of convincing a hoard of skeptical, self-serving people as to the correctness of what must be done. However, the problem of getting such a wise man who thinks only of what is best for all is extremely difficult, if not impossible. "Power Corrupts" seems to be the password and in practice the "wise benevolent" dictator is extremely rare. Thus, to protect against a possible cruel despot's continued corruption, democracy was formed. We set up rules and regulations limiting power and tenure. We attempted by legislation, to make all honest. As time went by, possibly because of infractions uncovered, we became more restrictive and more specific and as we attempted to close each possible area of corruption, unfortunately we, at the same time, closed many areas of judgment whereby the application of the specific laws have cost the taxpayers an immense amount of money. We knew this, but accepted it, as the cost of policing and protecting ourselves.

All well and good, but when do we go too far? When do we get so restrictive, because of the fear of corruption, that the costs to society are excessively high? And going further, the next step, getting legislation that attempts to be so specific that it not only costs society money, but does not accomplish what is purported, namely, to hinder corruption.

I feel that this has entered into Pl 92-500, commonly known as the "Federal Water Pollution Control Act Amendments of 1972." I feel strongly that Congress was misguided in at least one section, namely, Sec. 204 (a) (6) which states:

> "that no specifications for bids in connection with such works shall be written in such a manner as to contain proprietary, exclusionary, or discriminatory requirements other than those based upon performance, unless such requirements are necessary to test or demonstrate a specific thing or to provide for necessary interchangeability of parts and equipment, or at least <u>two brand names</u> or trade names of comparable quality or utility are listed and are followed by the words 'or equal'."

I feel it is very important to change this to the following:

> "that no specifications for bids in connection with such work shall be written in such a manner as not to allow equal equipment to be used, unless such requirements are necessary to test or demonstrate a specific thing, or to provide for necessary interchangeability

of parts and equipment. A brand name or trade name may be used to demonstrate the quality and type of equipment needed; however, when this is done it shall be followed by the words, 'or approved equal'."

The above is a small change, but an important one.

I make this recommendation based upon many, many factors, the main factor being that in many areas there is definitely a brand name of a specific type of equipment which is preferred. This preference may be because of performance in either operation, reliability or maintenance. There are many more cases of better and worse equipment than there are of equal equipment. It may be difficult or impossible to find two equal brand names. And furthermore, the intendment, that the requirement of two brand names prevents collusion between an engineer and a manufacturer, is highly illusionary. If the engineer has so little ethics as to desire collusion at the expense of his client, the mere inclusion of the words "two brand names" will not halt this type of immoral act.

As an example, let us take a hypothetical case where we have a specific item needed, such as a pump, for a specific restrictive type of application. Let us assume there are five manufacturers who state or imply they can supply such a special pump, calling them Brands A, B, C, D & E. Now within the industry (despite thoughts to the contrary) the operators and the engineers know that Brand A is far superior to the other brands, possibly in life, possibly in maintenance required, or just plan efficiency of operation. Let us also say that Brands B, C, D & E are relatively comparable, but are inferior to Brand A. Now in our hypothetical example let us take our immoral engineer who desires to make a deal with Brand C. There is nothing to prevent him from stating Brand A or Brand C or equal, knowing full well that Brand C,being cheaper than Brand A, will be chosen by a contractor. He could eliminate Brand B, D & E by saying that they were not equal to Brand A, and the contractor wouldn't fight him because Brand C is just as cheap. So what happens? Brand C, a make inferior to Brand A, gets installed. The operator or owner suffers for the remaining years trying to mend an inferior piece of equipment, and the engineer shrugs his shoulders, bemoans his fate, and blames EPA and Congress for requiring him to name a second brand, while he might pocket his illicit gains of any deal and go merrily on his way. The above is not cited as what does happen, but is merely to show that putting this requirement of two brand names in the law does not prevent collusion or immorality, but rather makes it easier. What it definitely does do is to reduce the quality of any installation to a common poor denominator, and lets the engineer off the hook as far as responsibility for this. I, therefore, predict many pieces of equipment will be thrown out and thrown away a few years after acceptance by the owner.

The manufacturer who has taken the time to produce a superior piece of equipment, that is willing to spend money on service calls to maintain this equipment, must suffer. No longer can it sit back and say it will sell additional equipment because of its reputation and the knowledge that its equipment is better, even though it may cost a few dollars more. It now finds that it must cut cost to meet its next competitor or lose the business. This becomes a cycle, and lest it is thought that it is a cycle for efficiency, I believe there is no truer statement in a moral situation than, "You get what you pay for." I say moral situation, because I do not believe that this legislation will correct immorality, and there will be situations where greed and self-interest will rule. We, who have had experience, know what it is to cry about and struggle to maintain inferior equipment because, when the selection was made, equipment cost was the only thing considered.

When wording a contract, it is very difficult to make a legal assessment of operation and maintenance costs, but that does not mean that experienced operators and engineers do not know how they affect the final operation of a plant. The words "or two brands names" take away from the Engineer or the owner the ability to buy a quality brand that will last beyond the warranty period, and worse, gives to a contractor, the ability to auction, after the contract is signed, with the various trade people.

Who benefits from such an auction? Not the owner, as the contract is already signed, but the contractor who may then put extra dollars in his pocket. The manufacturer, who continually loses this auction, must, of necessity,trim not only the fat, but more important,the muscle, in his product. We will find that the products are brought down to bare skin, which are prone to break down one day after the one year warranty.

At the same time the mandatory insertion of "or approved equal" does protect the public against the engineer being arbitrary and although the engineer may insert one brand name as a standard, other brands can be used if they are equal and approved, but it will be up to the contractor to show this equality. Also, the insertion of "or approved equal" will allow new items, or items not known to the engineer at the time of the writing of the specification, to be used if they are equal. I feel that the word "approved" should be used so that the engineer and owner has a say in the use of an item, and not that just a claim by a contractor, that an item is equal, will be justification for its use.

Another problem that can occur when two brand names are mandated is that a third brand can be used by a contractor which might embody the worst features of the two brand names thus be inferior and yet be equal to one or the other in each feature causing a problem in rejection. To illustrate what I am saying let me give a bizzare example so that the reader can see the ridiculousness of what could happen. Let us suppose we need a vehicle and we name Brand A & B. Brand A has a high horsepower and is heavy, rugged and strong, etc., but only gets 15 miles to the gallon. Brand B has a lower horsepower, is lighter and flimsy but

gets 20 miles to the gallon. The contractor supplies Brand C that has lower horsepower and is lighter and flimsy (as Brand B) and only gets 15 miles to the gallon (as Brand A) and if it is rejected, argues that each feature must have been acceptable since either brand was specified. Real problems develop here since, when we must put in <u>two</u> brand names, there must be trade offs of desirable and undesirable features.

I have been nebulous in this discussion in using Brands A, B, C, D & E, but, if necessary, specifics can be quoted, and although I believe it serves no purpose at this time to name and give black eyes to certain brand names, if it becomes necessary, this could be done.

Furthermore, what happens when a manufacturer does research and comes up with a proprietary item which excels others in its field? Are they not entitled to enjoy a profit from such research, from such benefit to the field? Yet, although this type of award is not excluded, in practice it becomes extremely difficult to convince a myriad of officials, in certain areas, that the product is indeed superior and that the engineer be allowed to name it, and in addition the delay of ½, 1 or 1½ years to convince the officials to allow this makes an engineer say, "The heck with it," and again he is forced to put in two brand names, and you can guess what the owner will receive.

Another offshoot or corollary of this law is the part of Rules and Regulations printed in the Federal Register (Vol. 39, No. 29) of February 11, 1974, which interprets this law. Paragraph 33.935-2(b) states, "The single base bid method of solicitation for equipment and parts for determination of a low, responsive bidder may not be utilized."

This interpretation prevents an owner from getting the best for its money considering <u>all costs</u>. The costs evaluated need not be limited to installation in a specific design, but can recognize the differences in costs of operation and maintenance. This could normally be done using base bids as per the following example.

Let us assume the owner desires a piece of equipment to do something, such as incinceration, sludge thickening, oxygen dissolution, or any of a host of other processes. Let us also suppose that equipment to do the specific work is manufactured by companies A, B,C and D. However, we may know that the various brands have different efficiencies, so that fuel or power costs are different. In addition, due to lubrication systems or other manufacturing peculiarities, the maintenance costs may vary. Maybe one needs new seals monthly, while the others only require them annually; maybe one needs a pretreatment unit, while others don't; maybe one requires a more expensively designed holding tank or supporting structure, while others don't; maybe one is noisier and requires acoustical treatment and the others don't. There also may be many other cost related problems, so that the best and most economical may not have the least purchase price.

By setting up base bidding where the general contractor bids on Brand A and gives plus or minus bids on Brands B, C, D, etc., the owner has the choice of evaluating the bids of A, B, C, D, etc., including the cost of effectiveness of operation and maintenance, and decides which piece of equipment it wants before awarding a contract, so that when a contract is finally signed, the contractor knows it must supply a specified Brand at its bid price for that alternate with, in some cases, guaranteed operating costs. This would not be allowed under Paragraph 35.935-2(b).

The base bidding system is also a method of controlling the bid of the manufacturer of a better and preferred article. Thus, although he may be awarded a bid if his product is superior and slightly more expensive, he cannot go "crazy" with his bid assuming he has the field to himself, since, if his bid is excessively high, in evaluating it, cost effectively, he may lose out.

We realize we must depend upon the integrity of the Engineer, but as stated before, an unethical Engineer must be attacked in ways other than that which detrimentally affects the very work which we are trying to do. We want to build the best treatment plants for the money, not the cheapest. We want our plants to last, once built, and not be forever rebuilding.

Many of our readers may not remember that in the "Thirties" the United States was flooded with a myriad of articles "Made in Japan." These articles were good looking but unsubstantial and of poor quality. The tinsel or coat of paint covered an item that lasted only a short time. Thus, the statement "Made in Japan" became synonymous for cheap and poorly made. Japan has come a long way since then as they now produce many quality items with great reputations. What we want is that our equipment manufacturers improve their products and not get the poor reputation so that "Made in U.S.A." means shoddiness and a breakdown after one year.

Many people have decried the shortcomings of Pl 92-500. They have talked about the funding, the capital cost recovery, the equitable cost aspects, the treatment and pretreatment problems, etc., all big and important problems but we have neglected the problem of the operator and the owner after all construction is completed and the system is in use. I have talked to many people and they agree with what I say, but they feel it is too small an item for which to fight. I don't agree, no item that affects quality, as much as this will, is too small to at least try to rectify - particularly when it is so easy to correct - at a savings to the taxpayer.

Special Report #6 - (From August 1974 Report)

Sludge Again

The problem of sludge disposal has been in the newspaper again, and I presume it will appear again and again until either the public is convinced that what is being done is the best ecological and economic solution available, or in the alternate, another method of sludge disposal is utilized.

The problem is extremely difficult since it embodies many facets of which one, not the least important, is to convince the public that what is recommended is, indeed, the best for the public. But before we can convince the public, we must prove scientifically and conclusively what really should be done, and then we must lay out a practical program for achieving this. We must not be stampeded into stepping out of the frying pan into the fire. We had done that too often in the past, with dire ecological results, to blindly make irreversible changes, until the matter is studied properly.

The fact that accusations are publicly made against the USEPA as doing nothing to "halt the tide of sludge from engulfing us", and the replies, which do not satisfy the public, of "there is nothing there to hurt us" does not mean nothing is being done. Unfortunately the public does not know all the facts, and since they hear that all is soon doomed, they feel they cannot afford the supposed inaction and are therefore putting the "heat" on many elected officials for actions - good or bad. Many officials, possibly needing an election issue or possibly believing what is said by some, do publicly make demands that would be foolish to implement at this time, while others, possibly more conservative or more aware of what is going on, listen to the public and try to explain the various problems and attempted solutions. Richard Dewling, Director, Surveillance and Analysis Division of the USEPA has handled this "hot potato" magnificiently. His problem was to explain without appearing to be making excuses. This does not mean that I agree with EPA's decision to move the disposal area in 1976 before the results of the studies, but I recognize that Mr. Dewling had problems. His problem was to explain without appearing to be making excuses. His problem was to satisfy the public without letting the "blind" public drive the bus. His problem will be not to make the "blind" public go where it does not want to go, but to teach it to see so that it recognises that the bus is truly being driven toward a solution.

The facts concerning sludge disposal at the New York Bight are these:

(1) Sewage sludge has been dumped in the same area at the New York Bight since 1924.

(2) During 1973, approximately 5.6 million cubic yards (1,132 million gallons) of sewage sludge, 3.8 million cubic yards (768 million gallons) of industrial wastes, and 11.8 million cubic yards (2,385 million gallons) of dredge spoil was dumped in the New York Bight area.

(3) With the upgrading of treatment plants,in this area, to secondary treatment, it is estimated by the USEPA that the volume of sludge, to be disposed of, will triple in the not too far future.

(4) There is no question that the area immediately associated with the dumping had been despoiled and the benthic life had been changed to an anaerobic one, a change that had occurred a considerable time ago. What is being debated and, many times hotly argued, is whether the area is spreading rapidly, and whether or not we are adversely affecting the beaches.

(5) The USEPA maintains that reports in the press that the present sewage sludge dumping site is causing environmental harm to beaches of Long Island are unfounded and lack technical substantiation.

(6) Studies by the USEPA, NOAA (National Oceanic and Atmospheric Administration), New York State Department of Environmental Conservation, and Nassau County, all of which were conducted independently, concluded that:

(a) There is no massive movement of sludge to the shores of Long Island.

(b) The waters of the beach areas along Long Island and the New Jersey coast are still of excellent quality, meeting stringent bathing bacteriological requirements, and therefore, safe for recreational use.

(c) The environmental "problems" described in the press appear due to inshore associated occurrences, rather than with the movement of sewage sludge.

(7) There are a group of people, led by Professor Harris of Brooklyn College, who disagree with the USEPA. They contend that the sludge is moving onto their beaches and is making the beaches unfit for bathing.

(8) Since 1967, the USEPA, Region II, has had the philosophy, and all construction grants that have been issued to New York and metropolitan area wastewater treatment plants have been on the basis that these facilities will "abandon ocean dumping when a more desirable disposal method is made available". Of course, the problem is "What is more desirable?" and "What is available?".

(9) USEPA regional policy also stated that new sludge incinerators at each individual plant were not considered to be acceptable alternates.

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On April 10, 1974, the USEPA sent letters to all authorities which disposed of sludge at the present location, requesting that a contingency plan be developed to dispose of the sludge at two alternate locations desginated in an enclosed map in the event that this is required by the USEPA.

PVSC contacted their hauling contractor, requesting information on equipment required to meet the USEPA plan. At this point, a paradox revealed itself. We were informed that 25% of additional equipment was needed to go to the 45 mile proposed dumpsite, and 60% additional equipment was needed to go to the 70 mile site. They estimated that the additional equipment needed would take two to three years to construct. They pointed out that in order to make a decision to construct additional facilities, the situation must become more stabilized. No contractor wanted to invest millions of dollars in equipment and then be told that ocean disposal was halted. What would happen to his investment? Since the USEPA and the PVSC were in no position to guarantee the use of equipment, why should a contractor construct such equipment? In addition, this type of equipment was not eligible for Federal Grants.

Thus, as long as plans are "tentative", no one wished to make the great investment to implement. If the plans are "definite", then there must be a time lag of at least 1-1/2 to 3 years to fully implement, and even then the contractor would want a committment to amortize the cost of the equipment. The USEPA was informed of this by PVSC on May 15, 1974.

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However, all is not lost, since we in Region II of the USEPA, are extremely fortunate in that the Regional Administrator, Mr. Gerald Hansler, has been able to see more than one facet at a time of this complex situation, and has come up with what I think is a reasonable approach.

The problem of what to do on the overall sludge problem has been divided into two study phases. The first was to find out what was really happening at the disposal site, and to evaluate the effect of controlled discharges at other selected sites in the marine environment. The National Oceanic and Atmospheric Administration (NOAA) was given this job and they are now conducting studies to determine the effects of the sludge dumping and to make recommendations concerning this.

The second phase, and acting concurrently with the above, was to study alternates to ocean disposal. A meeting was held on March 5, 1974, between the USEPA, NJSDEP, NYSDEC, and ISC, at which it was the general agreement that the solution of the problem would embody the establishment of a metro-area sludge management authority (authorities). Meetings were then scheduled with New York state sewer authorites and with New Jersey sewer authorities to explain the concept and the various roles to be played by each. The meeting with the New Jersey authorities was held March 19, 1974.

At this meeting, it was pointed out that forming such an authority might be premature, and that first studies should be conducted to determine what should be done,and then how, with the formation of the sludge management authority on the "how" part. It was explained by the USEPA that the Interstate Sanitation Commission (ISC) had been designated to conduct the study of developing alternate sludge plans to ocean disposal. This study was to be paid for by a grant from

the Federal Government. It was decided that the "work" would be divided into three parts, namely, Phase I, Preliminary Investigation of Alternatives; Phase II, Detailed Investigation of Feasible Alternatives; and Phase III, Development of a Metropolitan Area Sludge Management Program, based on results of Phase II. Phase I and II naturally had to go consecutively, but the legal investigations of Phase III were to be concurrent with Phase I and II. It was decided that a legal committee of Mr. Don Brown of NJSDEP, Mr. James Segreto of PVSC, and Mr. Ed Johnson of MCSA (Middlesex County Sewerage Authority) would be formed to aid Dr. Wendel of the Interstate Sanitation Commission in his legal investigation. A technical committee of Mr. S. A. Lubetkin (PVSC), Mr. S. Seid (MCSA), Mr. E. Decher (Elizabeth Joint Meeting), Mr. W. Kling (Rahway Valley Sewerage Authority), Mr. W. Zizik (Middletown Sewerage Authority), Mr. J. Costello (Bergen County Sewerage Authority), and Mr. R. Sobeck (Jersey City Sewer Authority), was selected and their Chairman, Mr. S. A. Lubetkin, was designated as a member of the Executive Committee to Advise the Interstate Sanitation Commission in this work. The Executive Committee consisted of the following:

Mr. Robert Olsen - U. S. Environmental Protection Agency
Mr. Tom Glenn - Interstate Sanitation Commission
Mr. Ernest Segesser - N. J. Department of Environmental Protection
Mr. Eugene Seebald - N. Y. Department of Environmental Conservation
Mr. S. A. Lubetkin - PVSC - rep. N. J. Sewer Authorities
Mr. Martin Lang - N.Y.C. - rep. N. Y. Sewer Authorities

The purpose of the Executive Committee was to advise the ISC in its study.

The first meeting of the Executive Committee was held June 17, 1974. The details of the scope of work to be performed by a consulting engineer was discussed and a list of engineers to be considered was discussed. The proposed contract was, in general, a study of the State-of-the-Art of alternate means of ultimate disposal of sludge. The Engineer was to be selected by the ISC and a proposal solicited. If the proposal was satisfactory, a contract was to be executed embodying the scope as discussed at this meeting.

At the second meeting (August 15, 1974), the engineering firm of Camp, Dresser and McKee (the firm chosen by ISC) presented a progress report and schedule of work to be done, with target dates, as follows:

GENERAL OUTLINE OF WORK PLAN FOR NEW YORK - NEW JERSEY METRO AREA SEWAGE SLUDGE DISPOSAL STUDY

I. Compilation of Data of Sludges Produced in Area at Present and in Future: Complete by September 15, 1974

A. Locate existing and planned wastewater treatment plants on large map of area including sludge storage and transport facilities

B. Collect information on treatment plant capacities and type of treatment

1. Obtain information on future capacities and treatment

C. Sludges produced at present

1. Volume/day
2. Type: raw, digested, chemical precipitates
3. Concentration of solids in sludge
4. Concentration of heavy metals
5. Concentration of toxic organics: pesticides

D. Sludges produced in future

1. Select "design" year
2. Volume/day and concentration
3. Type: raw, digested, chemical precipitates due to treatment
4. Predicted changes in concentration to toxic metals and organics

E. Identify plants having existing sludge disposal methods other than to ocean

II. <u>Preliminary Investigations Relating to Disposal Methods: Complete by September 15, 1974</u>

A. Check on any studies that may have been made for land-based sludge disposal methods for N.Y.-N.J. area

B. Check on solid waste disposal studies for area

1. Identify solid waste disposal systems in area

C. Investigate possible land disposal sites: Consult with Rutgers University Environmental Sciences and Agriculture Departments

1. Agricultural land
2. Waste land
3. Landfill sites

D. Update information on some newer disposal methods

1. Pyrolysis: Baltimore solid wastes plant; Twin Cities, Minnesota studies
2. Drying: Blue Plains plant at Washington, D.C.
3. Composting: USDA studies, Beltsville, Maryland

III. General Study of Major Alternatives: Complete by Nov. 15, 1974

Each of the following three basic disposal systems should be considered for disposing of all the sludges produced at regional facilities. The studies should include such items as: site location, transportation, environmental assessments, technical feasibility, permanance and long-term use, total cost estimates, energy usage, energy recovery.

A. Land: Evaluate Rutgers University Report

1. Agricultural
2. Waste land
3. Landfill
4. Consider sludge stabilization methods required

B. Thermal Processing

1. Incineration
2. Pyrolysis
3. Wet Oxidation
4. Disposal of residues from above processes
5. Air pollution control requirements

C. Recovery of Useful Materials

1. By drying
2. By composting
3. Consider recovery of materials from pyrolysis and wet oxidation
4. Investigate disposal or sale of products

D. Develop Basic Cost Data for Sludge Dewatering and Transportation

IV. Evaluation and Comparison of Specific Alternatives: Complete by January 15, 1975

A. Identify obviously unfeasible disposal methods due to unavailability of sites, excessive costs, unacceptable environmental factors, specific sludge characteristics, specific location of sludge production and transportation problems.

B. Consider use of sub-regional facilities with possible different disposal methods for different sub-regions.

C. Identify the technical and economic differences for various sludge treatments (chemical and heat conditioning) and dewatering methods as required for different disposal systems.

D. Indicate capacity and type of treatment facilities needed for liquid sidestreams produced at sludge disposal sites in connection with dewatering and other processing: sidestreams such as filtrates, centrates, overflows, scrubber water, etc.

E. Identify specific possibilities of disposal with solid wastes

1. By incineration
2. By pyrolysis
3. In landfills

V. Make Recommendations of Alternatives for In-Depth Study: By February 15, 1975

A. Have proposed recommendations reviewed for environmental impact.

B. Integrate proposed recommendations with Phase 3 studies of Interstate Sanitation Commission

VI. Draft of Final Report: By April 15, 1975

VII. Make Revisions in Report as Required by ISC: By May 15, 1975

VIII. Submit Final Report: By June 15, 1975

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At this meeting (and at the previous one), Mr. Lubetkin brought up a point that he felt had been overlooked. We are studying alternates to ocean disposal and we are studying the effects of our present ocean disposal, but nowhere did he see that we were studying methods to modify the ocean disposal to make it acceptable. We know the present disposal methods can be improved. If we had a significant part of the heavy metals removed by requiring industries to pretreat their waste before discharge (a legal requirement), this problem would be eliminated. If we then treated the sludge (as PVSC intends to do) with a thermal and pressure process so that the sludge is sterilized, there can be no further outcry concerning disease. Incidentally, the process also reduces organics the 50% required by the USEPA (although it has never been explained why this is so important), and in doing so oxidizes the highly volatile materials (hydro-carbons) and tends to crack the larger toxic type organic molecules.

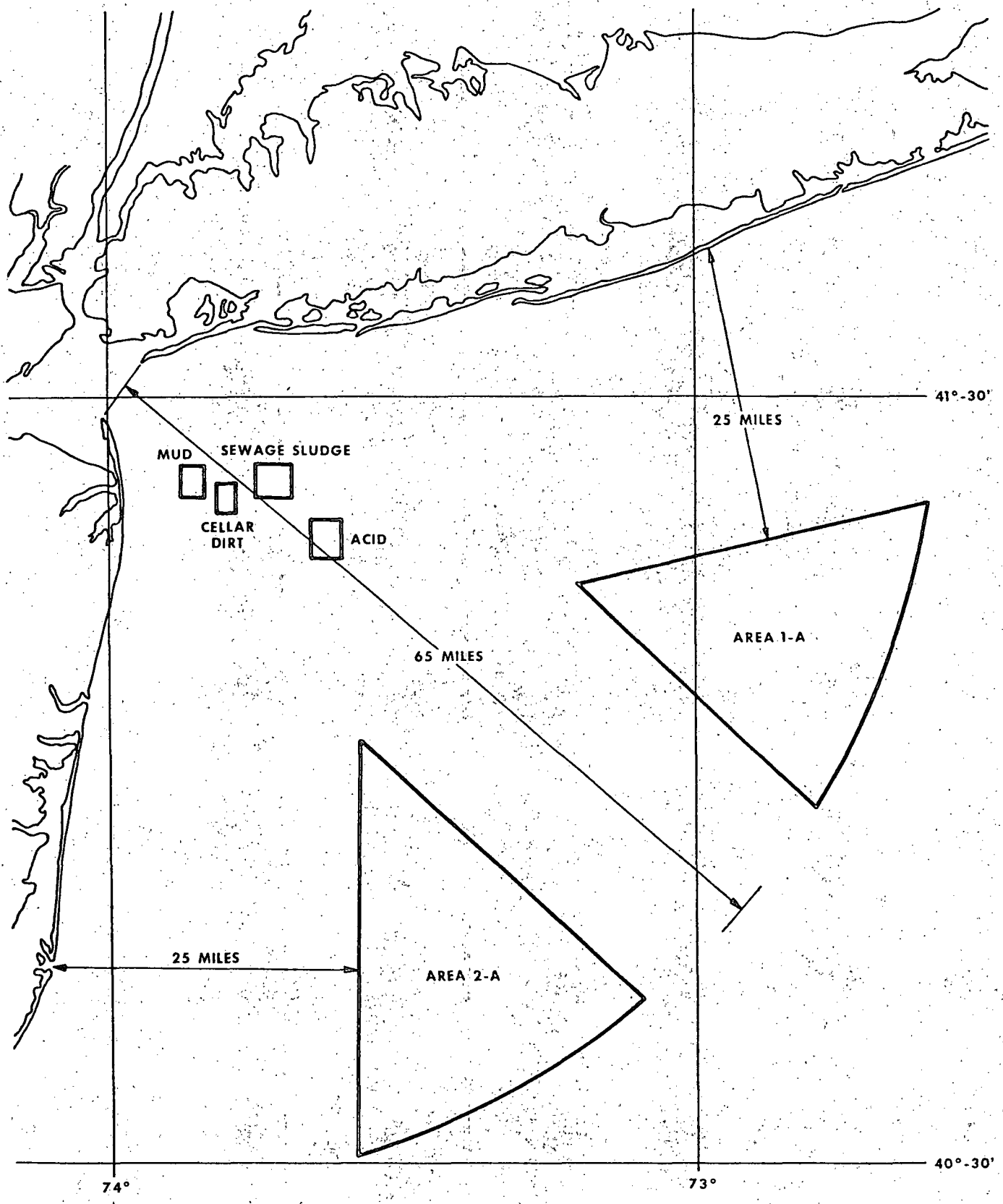
Thus, the sludge, properly treated, could be a good nutrient to the ocean and would be as much of a recycling procedure as manufacturing a product, such as fertilizer, with increased fish production as the end result.

Mr. Lubetkin was assured at both meetings that the sludge treatment would be studied as a pre-requisite for making fertilizer, and its value to the ocean would be equally good. Also, when the final report combining NOAA results with the alternates was being compiled, then the combination of properly pretreating the waste with final ocean disposal would be considered.

Mr. Lubetkin said that he felt that it then might be too late since, if NOAA's report was adverse to ocean disposal, it would be a report based on the existing sludge, which we all knew could be improved considerably, not based on a sludge that could be discharged. And if an adverse report is released, it would turn the public against what might be, and, in Mr. Lubetkin's opinion, was the best overall solution to the problem. With the pressure of public opinion being anti-ocean disposal, regardless of the true facts, it would be impossible for the USEPA or anyone else to then do what is technically correct for the environment. Mr. Lubetkin was again assured that this matter would be considered and the best possible alternate combining treatment with land and/or sea disposal would be recommended.

Meanwhile, on October 2, 1974, a letter was sent out from the USEPA to all New York and New Jersey sewerage authorities that use ocean disposal, telling them that, in accordance with previous notifications, in 1976 the ocean disposal permits will not be renewed for disposal at the present site. The specific location of the new "interim" site(s) would be designated in 1975 and EPA stated would be used until such time as environmentally acceptable alternates were implemented. A map showing the location of the proposed new sites (Areas 1-A and 2-A) located from 25 to 65 miles from land was enclosed with the letter and is reproduced on the following page.

In December 1974, PVSC received bids on the sludge disposal starting in 1975 and had an alternate price for the new disposal area. The increase was more than 88% over the cost to the present site. Since sludge disposal is a significant amount of the entire PVSC budget, this increase cost in 1976 will also be significant and, quite frankly, PVSC feels that the moving of the site should be delayed pending the results of the studies being undertaken.



NEW YORK BIGHT - "INTERIM" DISPOSAL SITE(S)

Other meetings of the Advisory Committee were also held on October 2, 1974 and December 18, 1974. A Progress Report was issued be the Interstate Sanitation Commission, based on reports of Camp, Dresser and McKee. This report, entitled "First Quarterly Report" follows in its entirety. Thus, there may be some repetition between information given in this report and with the general outline of work plan on the previous pages.

FIRST QUARTERLY REPORT (July-September)
NEW YORK-NEW JERSEY METROPOLITAN AREA
SEWAGE SLUDGE DISPOSAL MANAGEMENT PROGRAM

Since this is the First Quarterly Report of the program, background information and an outline of the scope of work are presented to provide a better understanding of the overall program.

General Background

Much of the sewage sludge in the New York-New Jersey Metropolitan Area is presently disposed of by barging to sea. The current uncertainties about the future of this means of disposal and the tripling of sewage sludge volume expected within the next several years because of the construction of secondary wastewater treatment plants pose a tremendous problem. There is a real need to focus on how to dispose of this sewage sludge on a regional basis. Based upon meetings between the States of New York and New Jersey, the U.S. EPA-Region II, and the Interstate Sanitation Commission, it was agreed that EPA-Reg.II would fund a $500,000 two year three-phase program for the Commission to be responsible for developing a viable and coordinated system for sewage sludge disposal for the New York-New Jersey Metropolitan Area by June 1976. In developing the program, the following EPA-Region II policies are being kept in mind:

(1) New sludge incinerators in each individual waste treatment plant are not to be considered;
(2) Disposal techniques must not contaminate groundwaters;
(3) It is to be assumed that the heavy metals and toxic chemical contents of sludges will be reduced to levels consistent with EPA pretreatment guidelines.

The land area that the program encompasses is the New York-New Jersey Metropolitan Area which includes all of the counties in the States of New Jersey and New York with all or any part of their tidal waters within the Interstate Sanitation District, plus the Counties of Passaic and Somerset in the State of New Jersey.

Briefly, the overall program consists of three phases: Phase 1 (10 months duration) will be a State-of-the-Art investigation of alternatives to ocean disposal of sludge and the recommendation of a limited number of the most feasible alternatives for an in-depth investigation in Phase 2 (12 months duration). These alternatives will then be compared with controlled ocean disposal. Concurrently with these two phases, a legal-institutional Phase 3 investigation is being undertaken to determine the requirements for the administration of the coordinated sludge management system for the region.

Phase 1 - Scope of Work (condensed)

The Scope of Work for Phase 1 is to perform a State-of-the-Art investigation of alternative means of ultimate disposal of sludge in the New Jersey-New York Metropolitan Area. This investigation defines the problem in terms of the present and projected sources and volumes of sludges produced and their chemical, physical, and biological properties. It includes sludges presently barged to sea and sludges now disposed of by other methods with identification of how each of the public waste treatment systems in the area now disposes of its sludge. The contractor is to identify the entire spectrum of feasible alternatives and make preliminary estimates of disposal costs and environmental impact of each. Each of the methods is to be analyzed from the point of view of efficacy and desirability or undesirability. Each of the methods is also to be compared with each of the others. Among the factors to be considered will be environmental impact; energy conservation; convenience; cost of collection, treatment, transportation and disposal either as a waste or as usable or marketable products. This phase is to include but not be limited to investigation of the following disposal techiques:

(1) Land disposal alternatives: (a) sanitary landfill, (b) spreading as soil conditioner and fertilizer, (c) various sludge solidification processes, (d) drying and selling for fertilizer and soil conditioner.
(2) Disposal by combustion (incineration): (a) incineration of raw sludge, (b) incineration in combination with solid wastes, (c) incineration to include power or steam generation.
(3) Disposal as a salable product: (a) activated carbon, (b) oil, (c) natural gas, each of the above through pyrolysis, (d) building products.

Phase 2

Phase 2 of the program is scheduled to begin in July of 1975 and will conclude in June 1976. The in-depth study will include:

(1) Good cost estimates;
(2) Thorough assessment of the environmental impact;
(3) Recommendations relative to the New York-New Jersey Metropolitan Sludge Management Plan.

Concurrently with Phases 1 and 2, the National Oceanographic and Atmospheric Administration (NOAA) is conducting a study in the New York Bight which will include the impact of ocean disposal. EPA will provide the Commission with input on the environmental consequences of ocean disposal so that a comparison can be made between controlled ocean disposal (taking into account of economic and environmental impact) and the in-depth study of the alternatives investigated in Phase 2 in order for the Commission to recommend the best overall sewage sludge disposal program.

Phase 3 - Scope of Work (condensed)

Phase 3 (undertaken concurrently with Phases 1 and 2) is an in-house investigation of legal and institutional requirements.

It includes:

(1) Analyses of New York and New Jersey environmental control statutes and administrative regulations and examination of relative statutory and operational authorizations and responsibilities to existing state and local agencies and governments in New York and New Jersey.
(2) An examination of sludge collection disposal as a state level function in New York and New Jersey.
(3) Drafting of sample statutes and/or interlocal and interstate agreements and contracts needed to implement the recommended legal and institutional approach to the problem.

Management of the Program

In order for the program to be successful and so that all sectors affected or potentially affected by the results of the program can be kept informed and be able to make an input to the program, the management of the program was developed for two-way communication. While the Commission is responsible for overall management of the development program, an Executive Committee composed of a representative from the State of New York, the State of New Jersey, the Environmental Protection Agency-Region II, the waste treatment agencies operating in New Jersey, the waste treatment agencies operating in New York, and the Interstate Sanitation Commission has been established. This Committee advises the Interstate Sanitation Commission concerning the conduct of the investigation. Technical advisory sub-committees have been established both by New Jersey and New York waste treatment agencies. A legal sub-committee has also been established in New Jersey. These sub-committees advise and present their views to the waste treatment agencies representative on the Executive Committee and thus provide an input to the entire program. With this program structure, information is able to flow both ways.

PROGRESS DURING FIRST QUARTER

Phase 1

Proposals for Phase 1 were received from eight Contractors and were narrowed to three Consultants. A representative of the States of New York and New Jersey, the U.S. EPA, and the Commission held oral interviews and selected Camp, Dresser & McKee for the Phase 1 project. Camp, Dresser & McKee commenced work on July 1, 1974. The Interstate Sanitation Commission is responsible for the overall management of the development program and for conducting Phase 3 Legal-Institutional investigation.

The following work plan was adopted with completion dates of subsections as indicated:

I. Compilation of Data on Sludges Produced in Area at Present and in Future: Complete by September 15, 1974.
   - A. Locate existing and planned wastewater treatment plants on large map of area including sludge storage and transport facilities.
   - B. Collect information on treatment plant capacities and type of treatment.
     1. Obtain information on future capacities and treatment.
   - C. Sludges produced at present.
     1. Volume/day
     2. Type: raw, digested, chemical precipitates.
     3. Concentration of solids in sludge.
     4. Concentration of heavy metals.
     5. Concentration of toxic organics: pesticides.
   - D. Sludges produced in future.
     1. Select "design" year.
     2. Volume/day and concentration.
     3. Type: raw, digested, chemical precipitates due to treatment.
     4. Predicted changes in concentration of toxic metals and organics.
   - E. Identify plants having existing sludge disposal methods other than to ocean.

II. Preliminary Investigations Relating to Disposal Methods: Complete by September 15, 1974.
   - A. Check on any studies that may have been made for land-based sludge disposal methods for N.Y.-N.J. area.
   - B. Check on solid waste disposal studies for area.
     1. Identify solid waste disposal systems in area.

C. Investigate possible land disposal sites: Consult with Rutgers University Environmental Sciences and Agriculture Departments.

1. Agricultural land.
2. Waste Land.
3. Landfill sites.

D. Update information on some newer disposal methods.
1. Pyrolysis: Baltimore solid wastes plant: Twin Cities, Minnesota studies.
2. Drying: Blue Plains plant at Washington, D.C.
3. Composting: USDA studies, Beltsville, Maryland.

E. Investigate important differences in treatment and dewatering methods and establishment of site requirements.

III. General Study of Major Alternatives: Complete by November 15, 1974. Each of the following three basic disposal systems should be considered for disposing of all the sludges produced at regional facilities. The studies should include such items as: site location, transportation, environmental assessments, technical feasibility, permanance and long-term use, total cost estimates, energy usage, energy recovery.

A. Land: Evaluate Rutgers University Report.
1. Agricultural.
2. Waste Land
3. Landfill.
4. Consider sludge stabilization methods required.

B. Thermal Processing
1. Incineration
2. Pyrolysis
3. Wet Oxidation.
4. Disposal of residues from above processes.
5. Air pollution control requirements.

C. Recovery of Useful Materials
1. By drying.
2. By composting.
3. Consider recovery of materials from pyrolysis and wet oxidation.
4. Investigate disposal or sale of products.

D. Develop Basic Cost Data for Sludge Dewatering and Transportation.

IV. Evaluation and Comparison of Specific Alternatives: Complete by January 15, 1975.

A. Identify obviously unfeasible disposal methods due to unavailability of sites, excessive costs, unacceptable environmental factors, specific sludge charisteristics, specific location of sludge production and transportation problems.
B. Consider use of sub-regional facilities with possible different disposal methods for different sub-regions.
C. Identify the technical and economic differences for various sludge treatments (chemical and heat conditioning) and dewatering methods as required for different disposal systems.
D. Indicate capacity and type of treatment facilities needed for liquid sidestreams produced at sludge disposal sites in connection with dewatering and other processing: sidestreams such as filtrates, centrates, overflows, scrubber water, etc.
E. Identify specific possibilities of disposal with solid wastes.

1. By incineration.
2. By pyrolysis.
3. In landfills.

V. Make Recommendations of Alternatives for In-Depth Study: by February 15, 1975.

A. Have proposed recommendations reviewed for environmental impact.
B. Integrate proposed recommendations with Phase 3 studies of ISC.

VI. Draft of Final Report: By April 15, 1975

VII. Make Revisions in Report as Required by ISC: By May 15, 1975.

VIII. Submit Final Report: By June 15, 1975.

Items I and II are completed except for the land disposal study which is not due (under a subcontract with Rutgers University) until the end of October.

Phase 3

Work on the legal-administrative investigation of regional sludge management possibilities in the New York-New Jersey Metropolitan Area began on July 1, 1974 (the effective contract date). One item was performed in advance of the aforementioned date. When it was ascertained that the investigation would proceed, Dr. Wendell met with representatives of the State of New Jersey and the New Jersey municipalities to receive from them indications as to their concerns and to discuss the conduct of work. Since July 1, a similar discussion has been held in connection with the CDM August Progress Report on the technical investigations which are proceeding concurrently with this contract. Further discussions with New York and New Jersey state and local interests will be held as the work proceeds.

The work during this first quarter has consisted largely of research and analysis of the statutes of New Jersey and New York relating to water quality management and relevant aspects of intergovernmental relations. The purpose has been to provide a basis for determining what legal authority now exists for sludge management, either by the separate jurisdictions or on a regional or subregional basis. These preliminary analyses are now complete.

They show that the legal bases for interlocal cooperation and liquid waste treatment in the two states is substantially different. New York has a state-level agency (the Environmental Facilities Corporation) which can assist, and under some circumstances operate or manage, municipal or county waste treatment and collection systems. New Jersey has no counterpart agency. In New Jersey, there is legislation being developed under which each county would be required to have a sewage collection and treatment authority. Existing regional authorities would be absorbed or converted to this county base. However, there is presently much doubt as to whether one of the largest of these entities in the New York Metropolitan Area (the Passaic Valley Sewerage Commissioners) would be affected. At the present writing, the New Jersey portion of the area is organized into several districts serving groups of municipalities and into some smaller units which treat their own wastes.

However, it should be pointed out that these differences are more in the legal authority for waste management than in the actual patterns of operation in the New York and New Jersey portions of the Metropolitan Area. At the present time, on each side of the state line, substate regional and local agencies perform the liquid waste collection and treatment function. They handle sludge disposal as part of that task, each making its own arrangements.

The New York interlocal cooperation statutes are broad enough to permit as many communities as might wish to do so to establish joint arrangements for the handling of sludge. Authorization even exists for them to do so in conjunction with political subdivisions of the State of New Jersey. In New Jersey, however, there is no similar piece of legislation. Consequently, sludge management on an interjurisdictional basis, except by existing district systems, would require additional legal basis. When the study is further along, a detailed examination will be made of what could be done on the New Jersey side short of legislation, but preliminary study indicates that additional legislation might be desirable, if not absolutely necessary.

No work has yet been done on Connecticut statutes. Because the study area has been delineated to include only the New York-New Jersey portion of the Greater New York Metropolitan Area, it has seemed appropriate to postpone such attention as can be paid to the Connecticut portion until the work is further along. As presently envisaged, the only consideration of Connecticut will be in order to ascertain and attempt to make sure that such arrangements as are recommended for sludge management would not be so constructed as to preclude Connecticut participation.

It has been necessary to await information from CDM relative to the identity of public systems generating sludge , their volumes and present methods of disposal. This information was received on September 15 and is now undergoing analysis. It is anticipated at an early date it will be possible to begin developing alternative sludge management arrangements based on the statutory analysis and the data concerning the present agencies involved in sludge generation and disposal.

SPECIAL REPORT #7 - (FROM NOVEMBER 1974 REPORT)

CHLORINATION - GOOD OR BAD?

Ecology and the Environment. These and the concepts they represent are probably the most important words of the last decade. And rightly so. Too long have we defiled our surroundings with the wastes of our civilization, and it is fortunate that we are finally slamming on the brakes and taking another look on how we must live.

It is common knowledge that we are greatly indebted to the many environmental groups for arousing our political leaders as to the gravity of the problems facing the waters of our nation. To the credit of our leaders they moved expeditiously, and a massive piece of Federal Legislation, known as "The Water Pollution Control Act of 1972" (PL 92-500) was enacted. This was acclaimed as a landmark of achievement, and with a great amount of good, turned the country, and the industries within it, toward the tremendous goal of cleaning up. A hue and cry of impossible went up - and maybe so - but we must admit we are moving in the right direction.

However, even its most ardent supporters do not claim the act is perfect. In fact, it is difficult to conceive that any act, so large and comprehensive, could be formulated without evincing many forms of weaknesses as we move toward implementation. Recognizing this, Congress has had and is having "Oversight Hearings" aimed at collecting data so that changes can be made that will make the "Act" more workable, practical, and still not lose sight of the ecological goals and objectives of the Act. I had in the PVSC October 1974 monthly report given my opinion on specifics wherein I think the Act should be amended so that we can continue with the process of "cleaning-up".

One other problem we have, is that Regulations are set up by the USEPA which use the Act as authority. This is necessary and required by the Act , but in many cases it results in interpretation of the intent of Congress (which may be right or wrong). These "Regulations" are usually published in the Federal Register allowing a comment period. The USEPA may or may not act on the comments given, depending upon their opinion of what is correct. However, an even further step from Congress and the act, is EPA's system of directives, Program Memoranda, and National Policy statements issued from Washington headquarters of EPA to the various Regional Offices which are intended to get uniform rulings in the various regions, which quite frankly, in many cases emasculate the decision making authority of the Regional Administrator. The problem we have (as with some parts of the Act), is that general policy guidelines are interpreted as fixed rules and applied to one and all indiscriminantly whether good or bad. We question whether, in all cases, the same fixed rules should apply across such a broad and varied country as ours with its deserts and lakes, mountains and valleys, forests and fields, urban and rural, and hot and cold areas? Where has the concept of studying each problem on a "case

by case basis", so we can do the most good, gone? Don't we trust our Regional Administrators with this authority? The result is, in my opinion, a further waste and slow-down which is blamed on the Act which is not really the Act itself, but the interpretation of it by a few individuals. We believe such a problem has developed with the concept of chlorination.

We are told that it is National Policy that all discharges that may contain pathogens shall be chlorinated all year, regardless of the type of discharge and regardless of the waters that the discharge enters. Now a first reading of such a policy would certainly appear to be reasonable, based on the premises that chlorination, as practiced by us, would disinfect and that no harmful side effects occurred. Unfortunately, both of these premises are false. This is the type of ruling that is made to appeal to "ecologists". This is the type of ruling that many fear to fight because it might seem as though they are fighting the "environmentalist". And worst of all, this is the type of ruling that, under the guise of doing good, can do more harm than appears on the surface. This type of ruling is an insult to the true environmentalist, because it caters to the two common misconceptions and assumes that those interested in our environment are too unintelligent to want to know all the facts and understand a case by case analysis.

In my dealings with ecologists, I have usually found them intelligent and willing to listen to any reasonable and logical discussion on ecological items. But because they don't want to be "snowed" or force fed on an idea that some "official" feels is what they want, there appears to be a feeling in official circles that they are unreasonable and, unfortunately, therefore some regulations are based more at a false attempt at appeasement than at true socio-economic-ecological benefits. Let us stop trying to feed them sugar coated pills and let's give them all the facts, and I am sure they will agree with our logical conclusion.

Let us look at the facts concerning year-round chlorination as it applies to the Passaic Valley Sewerage Commissioners' effluent, and see what an unbiased analyst would say.

For background information, you should know that PVSC operates a primary treatment plant which discharges approximately 250 million gallons daily of effluent into Upper New York Bay. We know our plant is overloaded and inadequate. We are presently designing a new secondary plant (the concept and engineering report has been approved by the USEPA), and final plans and specifications will be ready by mid-1975. Assuming rapid approval from EPA, construction on this $400 million dollar project can then start immediately. We presently chlorinate from May 15 to September 15 (the bathing season) each year and need about 45 tons per day of chlorine to achieve the required residual (that is when we can get enough chlorine). We have been told that we have the largest chlorine facility in the world.

We think even this chlorination is questionable, but because of public feeling during the bathing season (whether it be based upon fact or fancy), there may be some justification; however, we can see no justification for off-season chlorination.

In order that we may more intelligently evaluate as to whether or not it is proper for PVSC to chlorinate its effluent during the colder weather, I am breaking down the facts into six categories, as follows:

(A) Adverse Effects of Chlorination
(B) The Illusion of Safety By Chlorination
(C) The Waters Are Presently Safe
(D) Power Consideration
(E) Potential Disaster With Large Amounts Of Chlorine
(F) Economics

(A) ADVERSE EFFECTS OF CHLORINATION - The literature is replete with recommendations that chlorination of a primary treated effluent is not justified. The following are a few statements showing the problems encountered with treated wastewater effluent chlorination in general:

> Copepods are a major constituent of the microfauna grazed on by larval fish forms, and it is for this reason that information disclosing high mortality in a chlorinated environment represents a distressing fact.
>
> McLean - Water Pollution Control Federation Journal 45(5) pg. 840, May 1973

> Non-toxic effluents containing gas liquor were rendered extremely toxic by the addition of only small amounts of chlorine, amounts not sufficient to yield any measurable chlorine residual.

> In chlorinated wastewater effluents, the chlorine combines with with a number of materials, especially ammonia, to form extremely toxic compounds.

> Life cycle studies have shown that chloramine concentration of 0.085 mg/l nearly eliminates the spawning of the fat-head minnow and that concentrations of 0.043 mg/l significantly reduces reproduction.

> Recent on-site continuous-flow bioassays at Michigan treatment plants have shown that chlorinated effluents were toxic after diluting them to 2.0 to 4.0 per cent.

> Discharges of chlorinated effluents render portions of the receiving waters toxic to fish.
>
> Zillich - Water Pollution Control Federation Journal 44(2) pg. 213-220, February 1972

Chlorination tends to increase the toxicity of all treated effluent to a level that is significantly higher than that encountered normally for primary effluents.

Chlorination increased the toxicity of treated municipal wastewaters in all instances.

Esvelt et al. - Water Pollution Control Federation Journal 45(7) pg. 1569, July 1973

Water from chlorine-treated sewage ought not to be recycled because some viruses can stay viable in chlorine and because chlorine can react with organic molecules in sewage to form compounds whose chronic toxicity is unknown, the American Chemical Society was told.

A somewhat similar concern is whether the destruction of the usual indicator organism, Escherichia coli, is sufficient to make the water free of disease-causing organisms. The enterovirus group has been reported to be more resistant to free chlorine than Esch. coli.

Hospital Tribune Report, Sept. 17, 1973

An extensive bacteriological and chemical study was made on a particular segment of the Trinity River in Texas. Waste effluents were shown to contribute high numbers of fecal coliforms and fecal streptococci. Chlorination was effective in reducing the quantities of microorganisms only at the station where chlorine was directly applied. Hence, no station below the entrance of the chlorinated effluent was affected. Furthermore, bacterial populations were shown to recover immediately when chlorination was terminated. Beneficial heterotrophic organisms were observed to be most susceptible to chlorine, with fecal coliforms, nonfecal coliforms, and fecal streptococci being less susceptible in this order. Chlorination was not totally effective in destroying pathogenic Salmonellae; these organisms were isolated as frequently during chlorination as during periods of non-chlorination. Effluent BOD was slightly improved as a result of chlorination, as was DO. Self-purification became somewhat evident as the river proceeded downstream because the BOD was progressively decreasing. Chlorinated hydrocarbons were detected in the river as a result of chlorination; however, their effects on the microbiota and the ecology of the river have not been determined. Chlorination, according to the data obtained from this investigation, did not effectively improve pre-existing conditions of the river." (emphasis added)

Silvey et al. - "Bacteriology of Chlorinated and Unchlorinated Wastewater Effluents", Water Pollution Control Federation Journal, 46(9), September 1974, pg. 2160

But, J. Carrell Morris, a professor of sanitary chemistry at Harvard University, who also appeared at the news conference, said that "chlorination of sewage is potentially the most hazardous situation" because the chlorine can create "extremely harmful compounds" when it combines with other elements in sewage.

New York Times, November 20, 1974 - article entitled "Utility Group Criticizes Reports Hinting a Cancer Link to Water".

"A major problem suggested for several years and established in early 1974 is the unreliable nature of standard chlorine disinfection treatment of sewage and wastewater prior to disposal in waterways. Not only is chlorination ineffective against viruses, but it also can generate chlorinated organic compounds of questionable toxicity. Current sewage treatment techniques are not equipped to remove such compounds, and the incoming water to communities downstream from the disposal point generally contains these chemicals to some degree.

An increasing number of reports show biorefractory (nonvolatile) organic chemicals present in tap water. Carcinogenic (cancer-producing) polynuclear aromatic hydrocarbons were discovered in Rhine River water. The tapwater of Evansville, Ind. contained 13 organic compounds, including bis (2-chlorisopropl) ether from an industrial outfall 150 mi upstream. Only two-thirds of this chemical was removed by standard treatment of the incoming water supply.

The first definitive proof of the formation of chlorinated organic compounds was reported in early 1974 by a chemist at Oak Ridge (Tenn.) National Laboratory, who used a radioactive chlorine isotope to "tag" and identify the compounds that incorporated chlorine. Robert L. Jolley found more than 40 chlorine-containing organic constituents in the chlorinated effluent from the primary stage of a sanitary sewage treatment plant."

1975 Yearbook of Science and the Future, Encyclopaedia Britannica, Inc., pgs. 202-203

In addition, there has been considerable concern over the appearance of the cancerous material found in drinking waters which had contained organics and were chlorinated. Recently, Russell E. Train, the USEPA Administrator, stated that he was ordering an immediate nationwide study of this problem, and although it is admitted ours is not a drinking water, logic impels us to realize that with the greater amounts of organics in our effluent and greater amounts of chlorine that is used, the obvious conclusion is that the greater amounts of carcenogenic compounds are formed, and I will repeat a quote from Mr. Train's comment:

"...any meaningful epidemiological conclusions will have to await more information on the geographic distribution of the contamination."

Thus, we can see that the effect of chlorination on the biological communities in the receiving waters can be adverse. Fish life, in particular, is sensitive to very low concentrations of chlorine and some chlorinated hydrocarbons.

It must be realized that the further purification of the disposed wastewaters in natural waters is only possible because of the biological activity in the receiving waters, and in general, chlorination only modifies the polluting compounds in the wastes, and effects little real purification. In fact, the adverse effect on the biological community increases the time required for the final treatment given by the receiving waters.

(B) THE ILLUSION OF SAFETY WITH CHLORINATION - The stated purpose of chlorination is to render the receiving waters safe for public use (bathing, etc.). When one studies the literature, if we are objective, we are forced to the conclusion that this use is highly illusionary, since, in fact, the chlorination, particularly of a primary effluent, does not, in fact, disinfect. The following statements are taken from recent literature to support this position:

> Chlorination treatment of raw sewage is not reliable for the destruction of pathogenic organisms, since solid penetration is limited.
>
> Salvato Jr. - Environmental Engineering and and Sanitation, pg. 323

> The indications are that chlorination of secondary effluent, as is now practiced, does not produce a virus free effluent.
>
> Further research is required on disinfection by chlorine or other oxidants, such as iodine, bromine, and ozone. Since relatively high levels of such disinfectants might be required, more should be known of their reactions with the organic compounds in effluent streams.
>
> American Chemical Society - Cleaning Our Environment, The Chemical Basis for Action, (1969), pg. 134

> Another common, but erroneous, belief is that sewage discharged to the sea spreads all manner of disease and that froth, foam, debris and decomposing algae normally associated with beaches are derived from sewage.
>
> It has long been recognised that treatment at a sewage works and disposal to the sea involves the same natural purification processes.
>
> Carter - Disposal to the Sea is Sewage Treatment, Effluent and Water Treatment Journal (G.B.) 13, 7, October 1973, pg. 647

Does the chlorination of wastewater as actually practiced always achieve disinfection? Evidence indicates that it does not.

Recent studies indicate the ineffectiveness of the coliform test in judging parallel chlorine destruction of more resistant pathogens.

> Durham and Wolf, Wastewater Chlorination: Panacea or Placebo, Water and Sewage Works, October 1973, pg. 67

Plant studies of the survival of bacterial pathogens following chlorination have been summarized recently and indicate that ordinary chlorination does not destroy tubercle bacilli. Salmonellae have also been isolated from sewage following secondary treatment.

> Kelly - Water Pollution Control Federation Journal, 31(6), June 1959, pg. 688

Stormwater can be a major source of intermittent pollution to bathing beaches and to water supply reservoirs opened to limited public recreational uses.

> Geldrich - Water Pollution Control Federation Journal, 40(11), November 1968, pg. 1871

In a recent study on coliform and fecal coliform sources in an oyster growing area along the Gulf Coast, it was concluded that "soil in both the polluted and unpolluted areas serve as a reservoir that contribute to coliform and fecal coliform content of adjacent waters during periods of increased runoff". Obviously, if coliform contributions occur to shellfish waters from adjacent overland runoff, there is the potential danger of pathogenic contamination. The study further concluded that wild mammals and birds were responsible for salmonella introduction to shellfish waters through their droppings both directly to the waters or indirectly to the adjacent shore line.

> Presnell and Miescier - Water Pollution Control Federation Journal, 43, (1971), pg. 407

It has been recognized that unpolluted sea water does not contain large numbers of bacteria, and bacteria that enter from land drainage and sewage outfalls die quickly. Greenberg (1956) indicated there is a partial or complete disinfection and self-purification of sea water. Waksman and Hutchkiss (1937) suggested that the paucity of bacteria in sea water may be the result of one or more inter-related physio-chemical and biological factors. Whatever the factors are that promote the disinfection action of sea water on bacteria, it is important to note that it exists. It is suspected that the bacteriacidal effect of sea water is caused by bacteriaphage present in these waters. Since chlorination tends to inhibit these micro-micro organisms, in

effect, this protects the bacteria. This is the opposite of what we are trying to achieve. If bacterial destruction is naturally available, what additional benefits are derived from disinfection action of sewage effluents from a dispersed outfall not immediately adjacent to a bathing beach?

Since other industrialized nations of the world do not disinfect their sewage effluents (i.e., England, Germany, etc.), we should consider whether a practice of indiscriminate effluent disinfection actually achieves any beneficial objective, particularly in the winter.

Another extremely important aspect of chlorination, not usually discussed, is the effect of the fact that chlorination tends to kill coliform more rapidly than the more resistant pathogens. As most people know, the coliform themselves are harmless and testing for their presence is done to merely indicate the presence or absence of sewage and the potential of harmful pathogenic organisms. Thus, we say, in the absence of fecal coliform there should be no pathogens of enteric origin. This may be so if we did not chlorinate, but is less apt to be so with chlorination. To show what I mean, let us take a shellfish area which is tested for fecal coliform and found safe. A primary sewage outlet is put close enough to the shell fish area so that fecal coliform is now found in the area. Quite properly, the area is declared unsafe and "off limits". Now suppose the primary sewage treatment plant is required to chlorinate to kill the coliform, although we know it will kill many of the pathogens, the chlorination will not disinfect and many pathogens and viruses survive. Now when we measure the coliform at the suspect shellfish area, we find the count satisfactory, and if we declared the shellfish area safe based on these counts we are making a great mistake, since the shellfish may very well be contaminated in these "safe" waters and our public may get ill by eating these. If we do not disinfect, isn't it better to not chlorinate and at least our indicators will warn us from an unsafe area.

In addition, we do not know the range of the possible effect of the ingestion by shellfish of the toxic chlorinated hydrocarbons (which, as chemicals, travel much further than pathogens which are destroyed in saline waters), and as to whether these carcenogenic materials have secondary effects on man when eaten. Much more study is needed on this item.

Thus, we feel that the protection afforded the bather by chlorination is an illusion; however, if the public believes its beaches are protected in the bathing season by summer chlorination, we realize that the bathers should get this peace of mind, lest they refuse to use the beaches. We, therefore, are not objecting to bathing season chlorination, but we do not see even this justification for off-season chlorination, since the presumption that we are protecting shellfish (the only cold weather reason I can think of) is not only an illusion, but a dangerous illusion.

(C) <u>THE WATERS ARE PRESENTLY SAFE</u> - In July 1974, the USEPA put out a report entitled "Ocean Disposal in the New York Bight Technical Briefing Report Number 1", which contains data on the waters of New Jersey and New York beaches. Although the report was discussing the possible effect of sludge dumping, it did report the condition of the waters at the bathing beaches, and I quote from this report as follows:

Page 3:
"(4) Surf zone studies along the beaches of Long Island and New Jersey clearly indicate that the water is safe for contact recreation. The absence of pathogens in the surf zone waters provides further verification of excellent water quality."

Pages 14-15
"Data from the samples collected in the surf zone and near shore (Figs. 1-2) indicate low total and fecal coliform densities. The levels of fecal coliform at all sampling stations are significantly below the geometric mean density standards for primary and secondary contact recreation waters under New York's Class SB standard of 200 organisms/100 ml."

Page 15
"It is important to note that attempts to isolate Salmonella (enteric pathogens) at four sampling stations were unsuccessful."

The dates on which the samples were taken are at times when PVSC was not chlorinating, with the exception of July 9, 1974, and on that date, PVSC could only chlorinate at a rate of about 12 tons per day (more chlorine was not available).

Page 17
"Results of sampling in the surf zone and near shore (Figs. 10 and 12) indicate low total and fecal coliform densities. The level of fecal coliform at all sampling stations generally are far below the geometric mean density standards for primary contact recreation under New Jersey's Class CW-1 standard of 50 organisms/100 ml. Elevated coliform values observed at JC14 (Fig. 10) are related to an ocean outfall from a local municipal treatment plant."

Page 18
"Based upon sampling in the surf and near shore waters along the Long Island and New Jersey beaches, it is evident that water quality remains excellent with respect to coliform density and is acceptable for contact recreation. More important, there is no evidence of a trend towards increased coliform density and thus, no indication of degradation. The occasional elevated coliform counts noted in Tables 1, 2, 10, and 12 appear randomly distributed in time and location, and does not indicate a systematic change or degradation of water quality."

(D) POWER CONSIDERATION - It takes approximately 3,000 kw-hrs. of electricity to produce one ton of chlorine. Therefore, at the rate of 45 tons per day, 135,000 kw-hrs. of power is needed per day. This is over 4 million kw-hrs. per month, which is three times the power required than for the remaining PVSC facilities. Since the average household uses less than 400 kw-hrs. per month, enough power is used to manufacture this chlorine, to supply over 10,000 families with electricity. In addition, the PVSC must expend an additional 4500 kw-hrs. per day, or 135,000 kw-hrs. per month, for the operation of these facilities. (This would supply power for more than another 300 families). Thus, in a time of power shortage, we are utilizing a much needed resource without corresponding advantages.

(E) POTENTIAL DISASTER OF LARGE AMOUNTS OF CHLORINE - At the time the PVSC chlorination facilities were being studied, prior to construction, the NJDEP and the USEPA brought up a point that there was a potential hazard with such large quantities of chlorine being stored at one location. The problem of what would happen if an airplane from Newark Airport crashed into these facilities, where possibly six 90-ton cars were located, was discussed, and even the thought of a saboteur shooting a bazooka into a tank car entered into the conversation. In fact, because of this, PVSC is being required to build a protective wall along Wilson Avenue, so as to eliminate a possible hazard from a truck running out of control and hitting a tank car. After all of the discussions, it was finally admitted by the USEPA, that the probability of accident was not great enough to halt the construction of the chlorination facilities, and to this we agreed. However, as small as this exposure is, it was thought enough of by the NJDEP and the USEPA to spend considerable time in its discussion, delaying the work almost a year, and to require a special report by the PVSC. PVSC is merely pointing out, at this time, that whatever exposure there is would be increased three-fold if we extend the time of chlorination of four months to twelve months.

And finally, but unfortunately not the least,

(F) ECONOMICS - For the PVSC sewage, is is estimated that, on the average, approximately 45 tons per day of chlorine is needed to satisfy this requirement. As of January 1, 1975, the cost of chlorine was $216.00 per ton. This amounts to approximately $3,548,000. annually, of which $2,352,000. would be for chlorine usage during cold weather when the bathing beaches are not operating. To this must be added the cost of additional personnel of $73,000., oil for steam to convert liquid chlorine to gaseous chlorine of $20,000., and electricity to operate the system of $43,000., making a total increase of $2,488,000. for cold weather use, based on today's costs. If we put in the expected escalation in costs of fuel, electricity, chlorine, etc., we would have to put in our budget approximately $2,737,000. additional to cover off-season chlorination. Thus, we are talking of an increase of over 41% of our $6,623,100. 1974 budget for the year 1975, for increases on this item alone. An increase, when all other items are also skyrocketing, will adversely affect municipalities like economically depressed Newark and Paterson, which pay more than 50% of the cost of operation of the system and can ill afford any expenditures that are not absolutely necessary. This increase would be the annual debt service on the sale of over $39 million dollars worth of 6% bonds, a substantial part of PVSC's share of the improvement program.

I also wish to point out several statements made in the National Water Commission booklet, "New Directions in U. S. Water Policy", on Water Pollution Control (pgs. 36 to 43), which have a bearing on this matter, as follows:

> "...operation of waste treatment systems consume scarce minerals and energy. The chemicals used in waste treatment are themselves products of a process which also creates wastes. These chain effects mean that a large expenditure of resources to produce a small improvement in water quality may turn out to be counterproductive when total environmental consequences are considered."

> "Public expenditures for water pollution abatement must compete for limited tax moneys with social demand for housing, education, medical care, slum clearance, full employment, and price stability".

"The regulations should recognize that streams have a self-purifying capacity which allows them to absorb some kinds of discharges in reasonable quantity without harm."

"Drinking water requires high standards, navigation practically no standards at all."

It is also to be noted the USEPA estimated the total usage of chlorine for wastewater treatment during 1973 was 187,000 tons (Water Pollution Control Federation Journal 46(1), pg. 2, Jan. 1974). If PVSC had to use 45 tons/day for 365 days/year, this would be 16,425 tons, or almost 9% of the 1973 nation's use in wastewater treatment. We do not think that this makes sense for New York Harbor complex waters.

When we look at the expenditure, the natural question to ask is, "What are we buying for it?" The only answer I can think of is, "A headache".

SUMMARY AND CONCLUSIONS:

When all of the above are considered, we see the disadvantages, but fail to find any corresponding advantages for off-season chlorination. We feel that where there is a clear case of environmental necessity for a particular course of action, then cost becomes secondary, but we do not see this in off-season chlorination. We must realize that the cost of all work is becoming staggering, and wasted expenditures may make much needed improvements necessary elsewhere, impossible to achieve. This fact does not mean that PVSC should not chlorinate if ecological benefits were clear and unquestionable, but we do not feel we should chlorinate solely because a regulation or policy requires it. All we are asking is that chlorination of any particular waste, in a particular water, be decided on merit rather than blind rules. However, if, as it appears, chlorination of our primary effluent would create actual and potential toxic effects, and if the chlorination, as suggested in the literature, would have the potential of reducing the natural and purifying effects on pathogenic bacteria by adversely affecting competitive natural bacteria and predators present in saline waters, if the costs, as is obvious, are so staggering without any benefits we can see, then surely it is not reasonable to require PVSC to chlorinate its primary effluent during off-season periods.

SPECIAL REPORT #8

THE PASSAIC RIVER - 1974

During 1974 the flow in the Passaic River averaged 1,202 cubic feet per second, as reported by the U. S. Geological Survey Gauging Station, Little Falls, as compared to 1,857 c.f.s. for 1973. The breakdown by months, is as follows:

Month	1973 Flow (c.f.s.)	1974 flow (c.f.s.)
January	1,947	2,026
February	3,792	1,268
March	1,730	1,791
April	3,518	3,142
May	2,695	1,214
June	1,173	554
July	1,834	191
August	1,030	285
September	246	1,070
October	344	596
November	737	427
December	3,239	1,865
AVERAGE FOR YEAR	1,857	1,202

As can be deduced from the above, there were floods in January and April.

The dissolved oxygen in the river was excellent and the river was in good condition except for a tremendous amount of debris coming down from upstream and floating back from Newark Bay on incoming tides.

The graphs on the following pages show the rainfall and river flow (as measured at Little Falls, N. J.), together with the dissolved oxygen measured two feet below the surface at Eighth Street, Passaic, (about mid-point in the PVSC jurisdiction).

It can be noted that the dissolved oxygen in the river at Eighth Street, Passaic, was generally satisfactory.

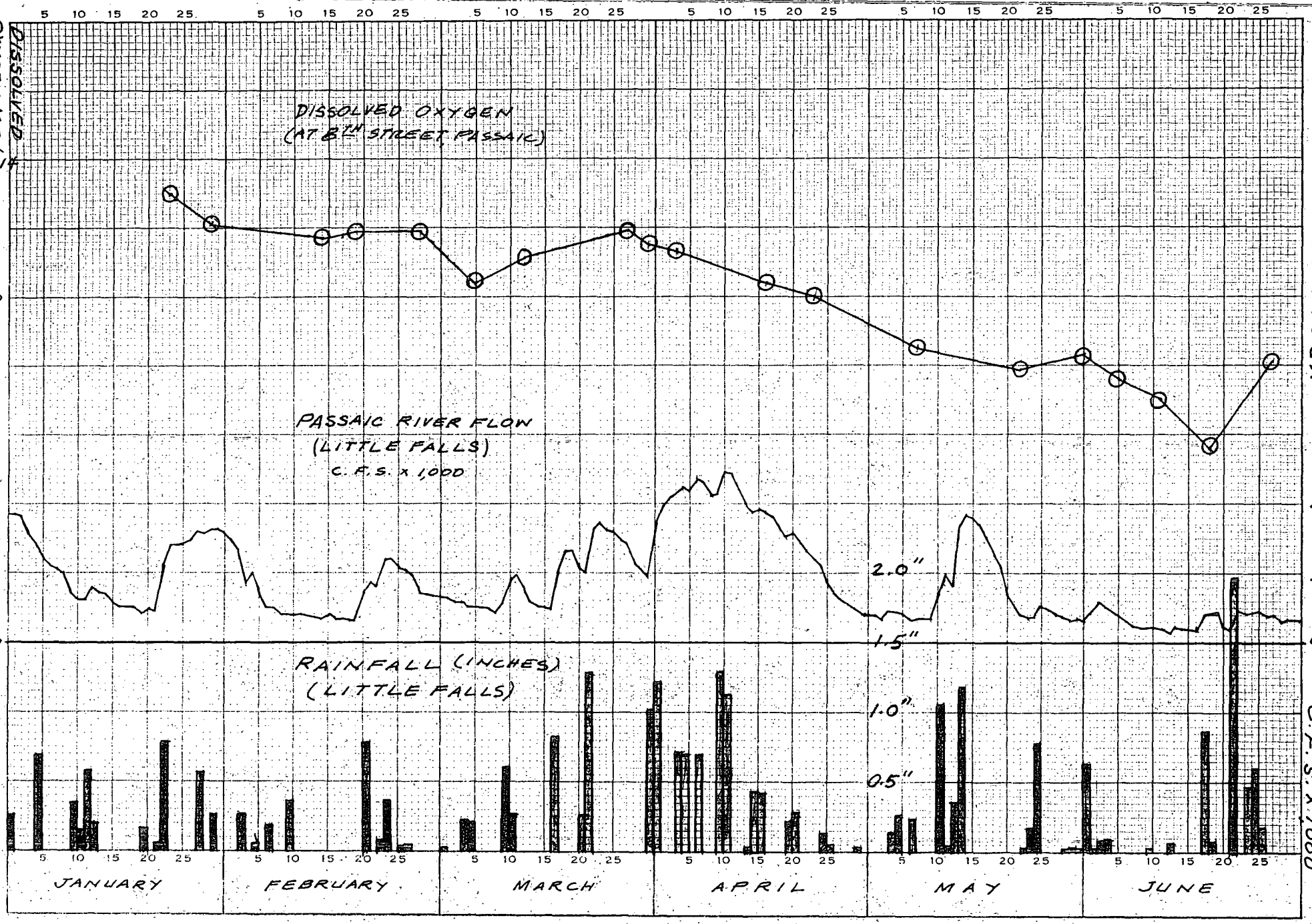
Individual problems occurred whereby debris clogged some of the tributaries and PVSC wrote to the New Jersey Department of Environmental Protection concerning responsibility, particularly where the stream is piped underground. PVSC was informed that under N.J.S.A. 58:1-26, the Water Policy and Supply Council must approve all construction along natural streams and prosecute violators of this statute; however, there are many constructions which were made prior to the enactment of N.J.S.A. 58:1-26 (1929) and others that are in violation of its provisions. The Division of Water Resources keeps records of all applications filed and Encroachment Permits issued, but with the present work load imposed upon the Stream Encroachment Section, it has made it difficult to devote a substantial amount of time researching past approvals. PVSC was informed that they would gladly assist any member of the PVSC staff assigned to determine the status of any stream encroachment causing a problem. PVSC intends to spend time in 1975 to attempt to unravel some of the apparent problems in this area.

PVSC was also informed that, at present, there were no general programs or State Funds appropriated under which debris and obstructions to flow within small streams would be removed; however, municipalities may, at their discretion, undertake work of this type under the provisions of N.J.S.A. 40:56-1 et seq., but are not required by statute to do so. The primary responsibility for maintaining free flow in streams lies with property owners or permit holders along these streams.

The Great Lakes Dredging and Dock Company, as a contractor of the U. S. Corps of Engineers, dredged a section of the Passaic River. The operation started on January 11, from the Erie Railroad Bridge in the Arlington section of Kearny, and proceeded north widening the channel until they reached the mouth of Second River (a distance of approximately 2800 feet).

By now everybody knows that we were forced to by-pass sewage to the Passaic River during the month of March in order to repair the cracked sewer under Route 21 in Newark near Riverside Avenue (see Special Report No. 3). We were fortunate in that the weather was cool and the latter part of the month and April was wet, helping to purge the river.

On April 22, PVSC received a call from Mr. P. Sutphen of Public Service Essex Generating Station, informing that oil was in Lawyer's Ditch (a small dead end tributary of the Passaic River). When Inspector McLaughlin checked he saw evidence of the oil on the banks but was unable to locate the source, altough he did report that a bulldozer had been working on Central Railroad of N. J. property (Block 5051, Lot 58, Newark), and that Lawyer's Ditch at this location has been covered with debris of almost every description.


DISSOLVED OXYGEN (AT 8TH STREET, PASSAIC)
OXYGEN M.G./L.
PASSAIC RIVER FLOW (LITTLE FALLS) C.F.S. x 1,000
RIVER FLOW
C.F.S. x 1,000
RAINFALL (INCHES) (LITTLE FALLS)
2.0"
1.5"
1.0"
0.5"
JANUARY
FEBRUARY
MARCH
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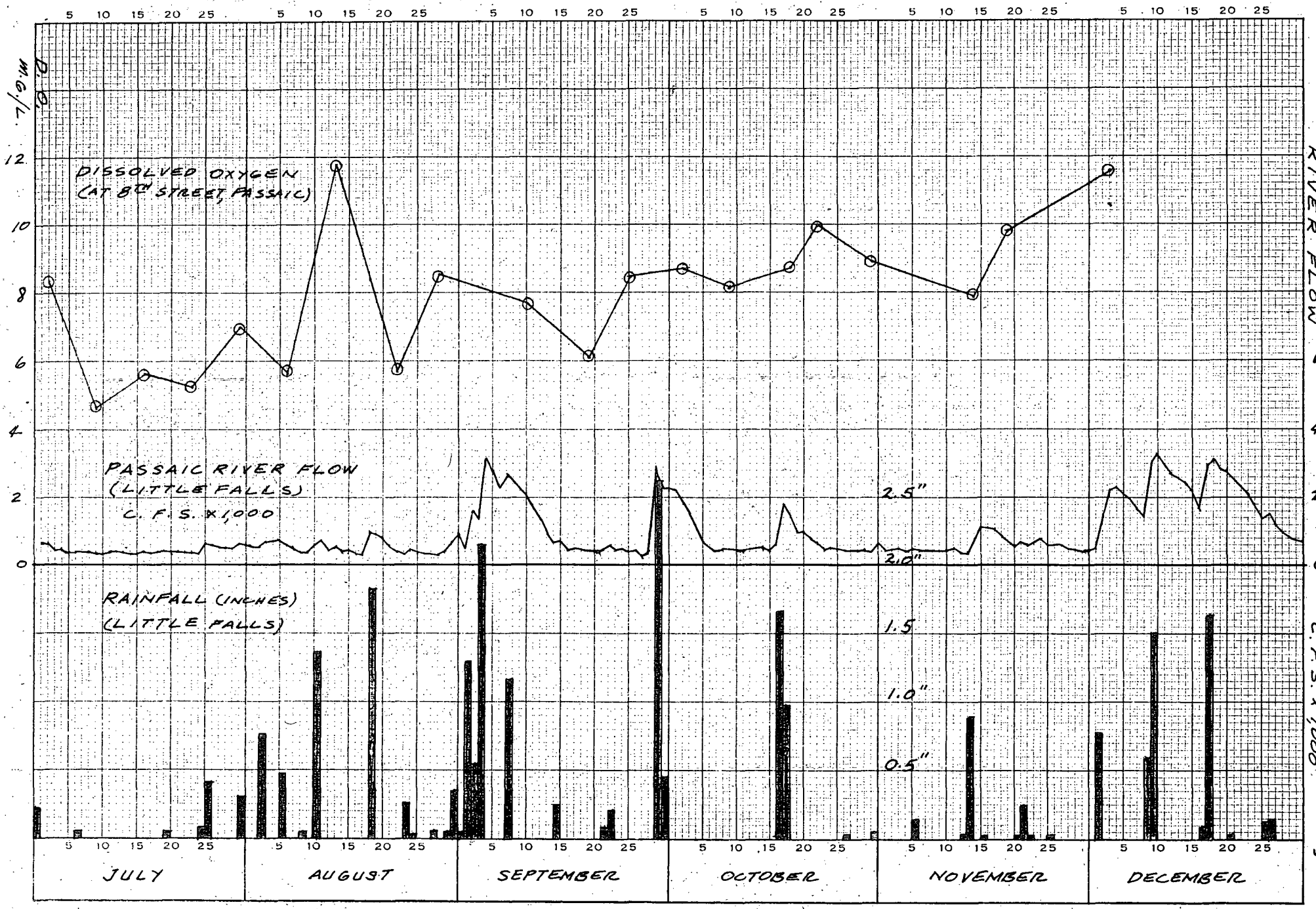
MAY
JUNE


D.O. M.G./L.
12
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DISSOLVED OXYGEN
(AT 8TH STREET, PASSAIC)
PASSAIC RIVER FLOW
(LITTLE FALLS)
C. F. S. X 1,000
RAINFALL (INCHES)
(LITTLE FALLS)
2.5"
2.0"
1.5
1.0"
0.5"
RIVER FLOW
6
4
2
0
C. F. S. x 1,000
5 10 15 20 25
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER

Again, during July, the problem of oil was noted in Lawyer's Ditch. PVSC inspectors traced it back to a vacant lot where much debris (including oil) had been dumped. The owner of the lot was notified that the responsibility of any pollution from the lot would be his. We received a reply, which surprised us. The following information is taken from the reply:

> The area in question had been leased to Newark Landfill Company to be filled with construction materials in accordance with N. J. landfill statutes. At no time had Newark Landfill dumped garbage or oily liquids in the dump area. In early June the U. S. Coast Guard called the owner, indicating there had been an oil spill in Lawyer's Ditch, and it appeared to come from their property. The area was inspected and a considerable amount of oily material was on the property and it was obvious that someone had dumped a considerable amount of the liquid in the area. An earthen embankment was constructed along the northerly property line to prevent illegal access to the property over the railroad tracks. On June 12, after receiving another complaint of an illegal dump, the owner discovered and impounded a bulldozer in the area owned by a Mr. J. Fresco. Newark police released the bulldozer after identification of the owner. On July 18, 1974, reports of garbage dumping in the area were received, so the property was staked out and, on July 19, a truck dumping a load of pallets, etc. was caught, and the driver stated he had received permission to dump by Mr. J. Fresco. On July 20, Mr. J. Fresco and another man were apprehended with a dump truck and bulldozer operating on this property. Charges were pressed and the two were held without bail for a court appearance on July 22, 1974. At the court hearing, Mr. Fresco's lawyer produced the adjacent property owner, who indicated he had given the defendants permission to dump debris on his property. The judge asked for a map showing the specific property lines and location of apprehension, which could not be produced at that time. The case was dismissed, citing that evidence was lacking and inconclusive.
>
> The owner stated he would install a fence to prevent a recurrence.

Besides Lawyer's Ditch, at various times oil or other pollutants were discovered in the Passaic River where we were unable to pinpoint the source, such as:

On February 13, a poor discharge occurred from the Entin Storm Sewer (Clifton) into the Passaic River, but it cleared before the PVSC was able to trace it to its source.

On February 19, an oil slick was noticed emanating from a 30-inch Nutley storm drain into Nichols Pond. This was traced by the PVSC Inspector Dondero and Nutley Department of

Public Works Foreman DeMarco, to a storm drain catch basin in High Street, but cleared before the source could be found.

On April 2, a Mr. J. Yeoman reported a bluish-green substance flowing in Third River, west of the Automatic Data Processing Corporation plant. Inspector Dondero checked the stream, but could find no evidence of discoloration or other pollution.

In September, a grey sample of an alleged discharge from the Joralemon Street storm drain (under bridge) into Third River had been sent to PVSC. Inspector Cordasco was sent to investigate but could find no pollution. The Inspector contacted Mr. Russamano of 724 Joralemon Street (source of sample) and was informed that the discharge occurs nights and weekends. The Inspector left his card and requested he be called if the discharge occurred again at any time.

Other times we received calls which really weren't pollutions, such as, on April 23, a call was received at 12:15 P.M. from Mr. L. Ebeling from Nutley, that there was a yellow-white dye in Nichols Pond, in the vicinity of Lake Street, Nutley. Inspector Dondero was sent to investigate and he reported that there was a yellowish white powdery substance along the shore of Nichols Pond. After checking closer with representatives of the Nutley Board of Public Works, they discovered that the treees running along the banks of Nichols Pond were shedding a flowery bud that when touched gave off the powdery substance which coated the side of the pond. This is an example of how Mother Nature, in her ecological cycle, contributes to what we sometimes call pollution.

Another complaint with an amusing solution came on April 24, when PVSC was notified of a spotty yellow material in Dahnert's Lake, Garfield. Investigation revealed that a citizen was feeding corn kernels to the ducks, and evidently he was feeding at a faster rate than the ducks consumed the tid-bits, with a result that many kernels were visible in the lake. Who do we cite, the man or the ducks?

But seriously, although technically polluting, I like to think that this is what we are attempting to achieve, waters clean enough to give us recreation and relaxation. Somehow, I cannot think it bad that a man or his children can feed the ducks. In fact, I like it, and I'm sure that the unused food will not destroy our environment, and the pleasure to the feeder makes him value our resources all the more.

Other times pollution occurred because of a sewer flushing or construction job, such as, on May 22, the PVSC received a call that a polluting discharge was going into Third River somewhere in Bloomfield. The inspector walked the banks and noted that at the mouth of the 24-inch Bloomfield storm sewer at the foot of Meadow Lane, there was evidence of a former discharge. The inspector interviewed a person who had seen it discharged two

nights in succession (May 21 and May 22 at approximately 6:00 P.M.). The resident was told to contact the PVSC if it occurred again, regardless of the time. Mr. Friedman, Town Engineer, was contacted and told of this pollution problem. He told the inspector that Bloomfield had flushed out the storm sewer those nights, but had added nothing but water, and the material was that which had been laying in the storm sewer.

Or, as on Thursday, June 20, 1974, at approximately 1:00 P.M., a 12-inch water line at Valley Road and Elston Road, Montclair, was broken by the Cavalieri Construction Company of Haledon while doing excavation for the Essex County Road Department. A large amount of water washed dirt and mud into the Norwood Road storm sewer which then went through an open ditch to Pearl Brook. Pearl Brook was turned muddy brown and looked terrible. The valve to halt the flow was finally closed at 7:30 P.M. and by the following morning the brook was clear again.

Stagnation in Nichols Pond on August 12th caused problems. An algae bloom may have depleted the oxygen, so that a large number of dead fish were noted at the dam which overflows into Third River. PVSC checked the outlets to the pond and they were satisfactory. Arrangements were made by Mr. Restaino, Health Officer, to flush out the pond over the week end.

On August 13, the Passaic River had a charcoal grey cast to it. It was traced to the Passaic Valley Water Commissioners' treatment plant at Little Falls. Once each year they must back flush their basins. Although they feel this discharge does no harm and is merely concentrated river silt, a $4,000,000. sludge plant is being constructed to handle this material in the future. The inspector reported that on the morning of August 14, the river appearance was normal.

On April 1, 1974, it was reported that the oil pond, located behind the Diamond Head Oil Company, overflowed (due to heavy rains at the end of March), as it does after all heavy rains, and the oil went into Harrison Avenue, into a storm sewer, thence to Frank's Creek. Mr. Lubetkin wrote to the NJDEP to find out the status of this situation since last year, when they had put Diamond Head Oil on notice to clean up.

During July of 1974, a storm sewer was installed in Harrison Avenue, Kearny, which made it easier for the oil from the Diamond Head Oil Complex to reach Frank's Creek without going over the road. As you know, this oil pollution is being handled by the NJDEP.

The County of Hudson was contacted concerning the construction of this sewer (apparently being built only to carry oil pollution) on July 22. A reply was received dated July 29, from the County Engineer, stating that they were well acquainted

with the oil problem during heavy storms, but they did not know of any new storm drains at this location. He said it would be checked and PVSC would be further advised.

On August 22, 1974, Mr. Lubetkin again wrote a letter to the Enforcement Section of the NJDEP, requesting an updated report on what is being done concerning the oil pollution in Frank's Creek. We are informed by the NJDEP that the matter is in the hands of the Attorney General and that there have been several meetings in recent months regarding efforts to solve the problem among the NJDEP, NJDOT, HMDC, and the U. S. Coast Guard. However, all proposed solutions to date have been rejected. We were told that a meeting had been scheduled for August 6 with all interested parties.

On September 13, 1974, we received an undated letter from the NJDEP, Oil and Hazardous Materials Program, stating that they were working closely with the Department of Transportation and the Hackensack Meadowlands Development Commission in order to reach a successful solution to the problems created by the oil on the property of Diamond Head Oil Refinery, which goes into Frank's Creek during rain, and they hoped to be able to inform PVSC in the near future of the provisions of a clean-up program.

The Bergen County Mosquito Commission started digging and cleaning Sprout Brook in Paramus, New Jersey, on December 9, 1974, causing muddy water to be detected at the Alexander Shopping Area and downstream. We are informed the work will continue another two months with about three miles of brook remaining to be cleaned.

Other specific pollutions are reported in Parts II and III of this report.

On the following pages there is a list of the Passaic River Tributaries between the Great Falls and the mouth at Newark Bay, along with a schematic diagram of the Passaic River, showing the tributaries in the PVSC basin area.

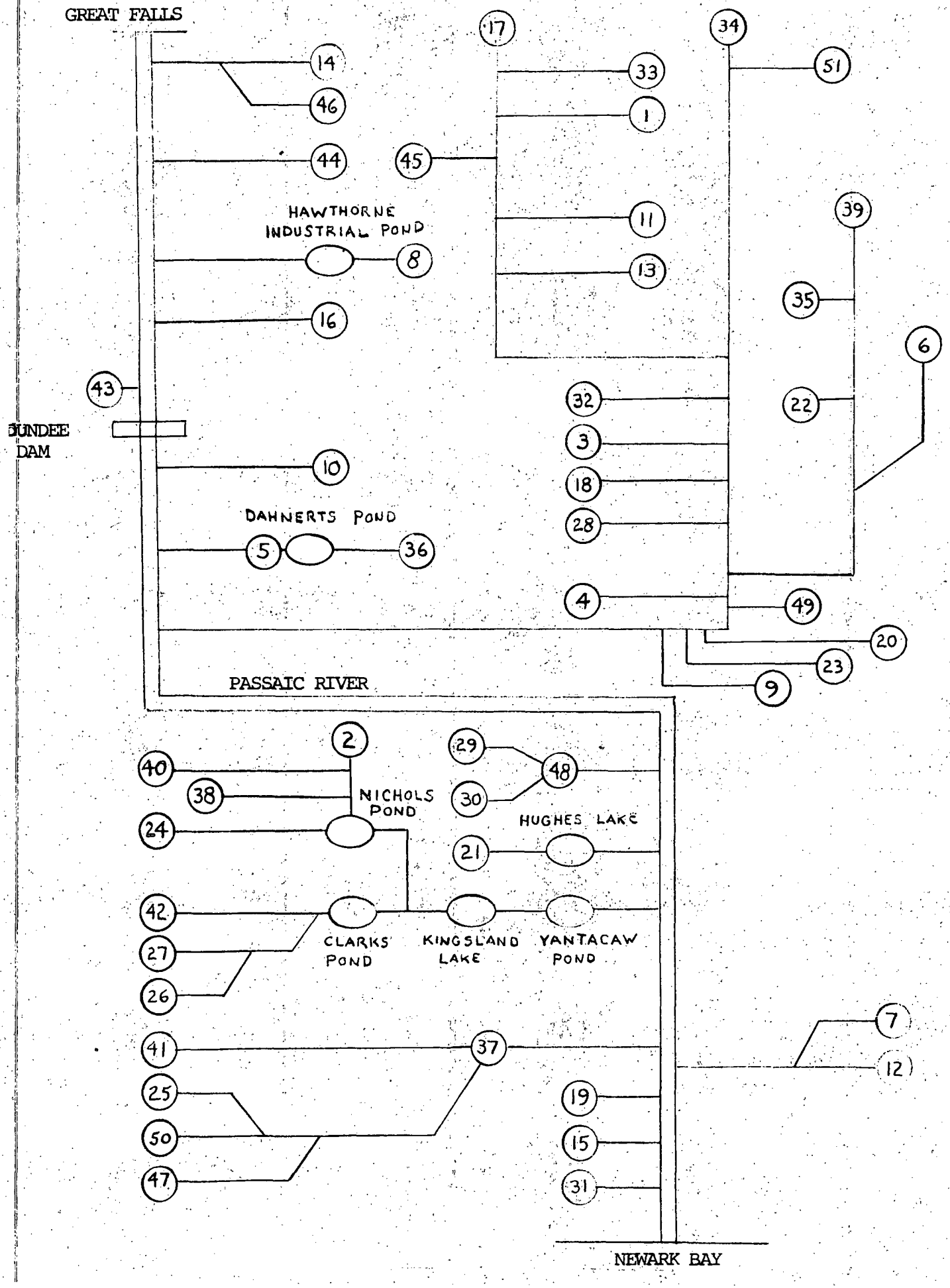
PASSAIC RIVER TRIBUTARIES BETWEEN THE GREAT FALLS AND THE MOUTH AT NEWARK BAY

NO.	NAME OF TRIBUTARY	
1	Allendale Brook	Enters Ho-Ho-Kus Brook at Waldwick
2	Allwood Brook	Enters Nichols Pond at Nutley (Kingsland Rd.)
3	Beaverdam Brook	Enters Saddle River at Fair Lawn
4	Colesberg Brook	Enters Saddle River at Saddle Brook
5	Dahnert's Brook	Enters Passaic River at Garfield
6	Delford Brook	Enters Sprout Brook at Paramus
7	Dead Horse Creek	Enters Franks Creek at Kearny
8	Diamond Brook	Enters Passaic River at Fair Lawn
9	Feld's Brook	Enters Saddle River at So. Hackensack
10	Fleishers Brook	Enters Passaic River at Garfield
11	Franklin Tpk. Brook	Enters Ho-Ho-Kus Brook at Waldwick
12	Franks Creek	Enters Passaic River at Kearny
13	Glen Ave. Brook	Enters Ho-Ho-Kus Brook at Ho-Ho-Kus
14	Goffle Brook	Enters Passaic River at Hawthorne
15	Harrison Creek	Enters Passaic River at Newark
16	Henderson Brook	Enters Passaic River at Hawthorne
17	Ho-Ho-Kus Brook	Enters Saddle River at Fair Lawn
18	Jordan Brook	Enters Saddle River at Fair Lawn
19	Lawyer's Ditch	Enters Passaic River at Newark
20	Lodi Brook	Enters Saddle River at Lodi
21	Mac Donalds Brook	Enters Hughes Lake and Passaic River at Passaic
22	Mannings Brook	Enters Sprout Brook at Paramus
23	Millbank Brook	Enters Saddle River at Lodi
24	Nichols Brook	Enters Nichols Pond and Third River at Nutley

PASSAIC RIVER TRIBUTARIES (continued)

NO.	NAME OF TRIBUTARY	
25	Nishuane Brook	Enters Wigwam Brook at Orange
26	Notch Brook	Enters Pearl Brook at Clifton
27	Pearl Brook	Enters Third River at Bloomfield
28	Pehle Brook	Enters Saddle River at Saddle Brook
29	Pershing Brook	Enters Weasel Brook at Clifton
30	Plogs Brook	Enters Weasel Brook at Clifton
31	Plum Creek	Enters Passaic River at Newark
32	Prospect Brook	Enters Saddle River at Glen Rock
33	Ramsey Brook	Enters Ho-Ho-Kus Brook at Allendale
34	Saddle River	Enters Passaic River at Garfield-Wallington Line
35	St. Andrews Brook	Enters Sprout Brook at Paramus
36	Schroeders Brook	Enters Dahnerts Pond at Garfield
37	Second River	Enters Passaic River at Newark - Belleville Line
38	Solomon Brook	Enters Allwood Brook at Clifton
39	Sprout Brook	Enters Saddle River at Rochelle Park
40	Styertowne Brook	Enters Allwood Brook at Clifton
41	Tony's Brook	Enters Second River at Bloomfield
42	Third River	Enters Passaic River at Nutley
43	Wabash Brook	Enters Passaic River at Clifton (north)
44	Wagaraw Brook	Enters Passaic River at Hawthorne
45	Waldwick Brook	Enters Ho-Ho-Kus Brook at Waldwick
46	Washington Brook	Enters Goffle Brook at Hawthorne
47	Watsessing Brook	Enters Wigwam Brook in Watsessing Park, Bloomfield
48	Weasel Brook	Enters Passaic River at Passaic
49	Westerly Brook	Enters Saddle River at Rochelle Park
50	Wigwam Brook	Enters Second River in Watsessing Park, Bloomfield
51	Zabrieskie Brook	Enters Saddle River at Ho-Ho-Kus

SCHEMATIC DIAGRAM OF THE PASSAIC RIVER SHOWING TRIBUTARIES IN THE P.V.S.C. BASIN AREA



SPECIAL REPORT #9

GENERAL OPERATIONAL REPORT

During the year 1974, the Passaic Valley Sewerage Commissioners pumped and treated an average daily flow of 244.44 M.G.D. This made the cost $54.546 per M.G. for the Newark South Side sewage, and $72.727 per M.G. for all other sewage. The $72.727 per M.G. is broken down as follows:

PENSION PLAN		$ 3.275.
ADMINISTRATION		
Salaries	$ 4.113 per M.G.]	8.852
Expenses	$ 4.739 per M.G.]	
LINE MAINTENANCE		
Salaries	$ 5.845 per M.G.]	8.377
Expenses	$ 2.532 per M.G.]	
RIVER INSPECTION AND SANITATION CONTROL		
Salaries	$ 3.108 per M.G.]	3.321
Expenses	$ 0.213 per M.G.]	
PUMPING OPERATION - MAIN STATION		
Salaries	$ 3.623 per M.G.]	8.650
Expenses	$ 5.027 per M.G.]	
TREATMENT OPERATION - MAIN STATION		
Salaries	$ 5.156 per M.G.]	13.256
Expenses	$ 8.100 per M.G.]	
MAINTENANCE OPERATION - MAIN STATION		
Salaries	$ 5.457 per M.G.]	6.104
Expenses	$ 0.647 per M.G.]	
YANTACAW PUMPING STATION		
Salaries	$ 1.514 per M.G.]	1.664
Expenses	$ 0.150 per M.G.]	
WALLINGTON PUMPING STATION		
Salaries	$ 1.461 per M.G.]	1.849
Expenses	$ 0.388 per M.G.]	
INFILTRATION/INFLOW		3.503
BOND DEBT (1972 BONDS)		17.094
	TOTAL	$ 75.945
CREDITS (Insurance claims, Tax Refunds, Invest. etc.)		3.218
	NET	$ 72.727

At the Newark Bay Pumping Station and Treatment Plant, under the direction of Superintendent of Plants T. Perry, Plant Engineer P. Walker, Ass't. Plant Engineer A. Malba, and Superintendent of Construction and Maintenance C. Daly, 12,571,380 kw-hrs. of electric power were used at a cost of approximately 2.79¢ per kw-hr. In addition, 370,981 gallons of #2 diesel fuel oil were used at an average cost of 29.62¢ per gallon.

It is estimated that 53,353 million gallons were pumped with electric power, and 29,612 million gallons with diesel power. Flow peaks were as follows:

Peak instantaneous flow rate: 384 M.G.D. at 5:45 A.M. on 4/9/74
Peak rate of flow for one hour: 376 M.G.D. from 5 to 6 A.M. 4/9/74
Peak flow for one day: 316.57 M.G.D. - 9 A.M. 4/8/74 to 9 A.M. 4/9/74
Peak flow for one week: 283.29 M.G.D. - 9 A.M. 4/8/74 to 9 A.M. 4/15/74

The Commissioners barged 523,124.81 wet tons of sludge to sea at an approximately average solids content of 8% to 10% during the year under the direction of Superintendent of Dock and Basins, M. Andolino. 1,899 cubic yards of screening and 6,531 cubic yards of grit were removed at the Newark Bay Plant, and an additional 2,189 cubic yards of screenings and grit were removed from line screens and chambers during the year.

As in the past several years, after each major storm, there was considerable difficulty with the basins. Grit and rags that went through the inadequate screen and grit chambers overloaded the basins to the point of massive breakdowns. PVSC personnel worked hard to return the basins to normal after each storm, but the real key is the need for additional screens and grit chambers that will be supplied with the new head end facilities now under construction.

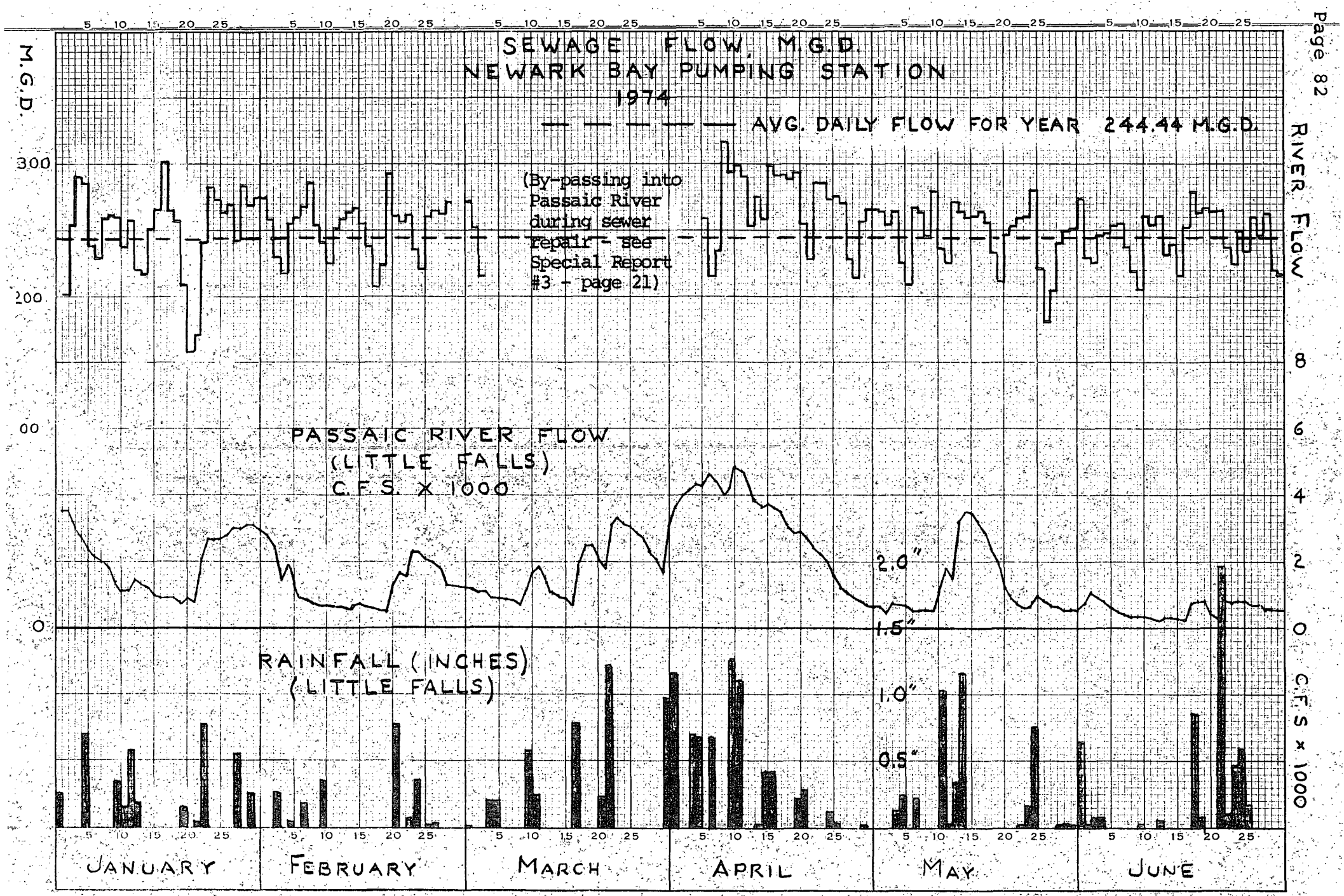
In addition, at the Main Station we have been having considerable difficulty with the screens. The new ones were expected to be in operation originally March 1973, but the construction is approximately two years late, and since the old screens, which would need major expenditures and time (and diversion to the river) to repair, were to be scrapped, no major work was done on them. The Main Station maintenance crews are keeping them going in a race between failure of a screen and getting the new facilities operational.

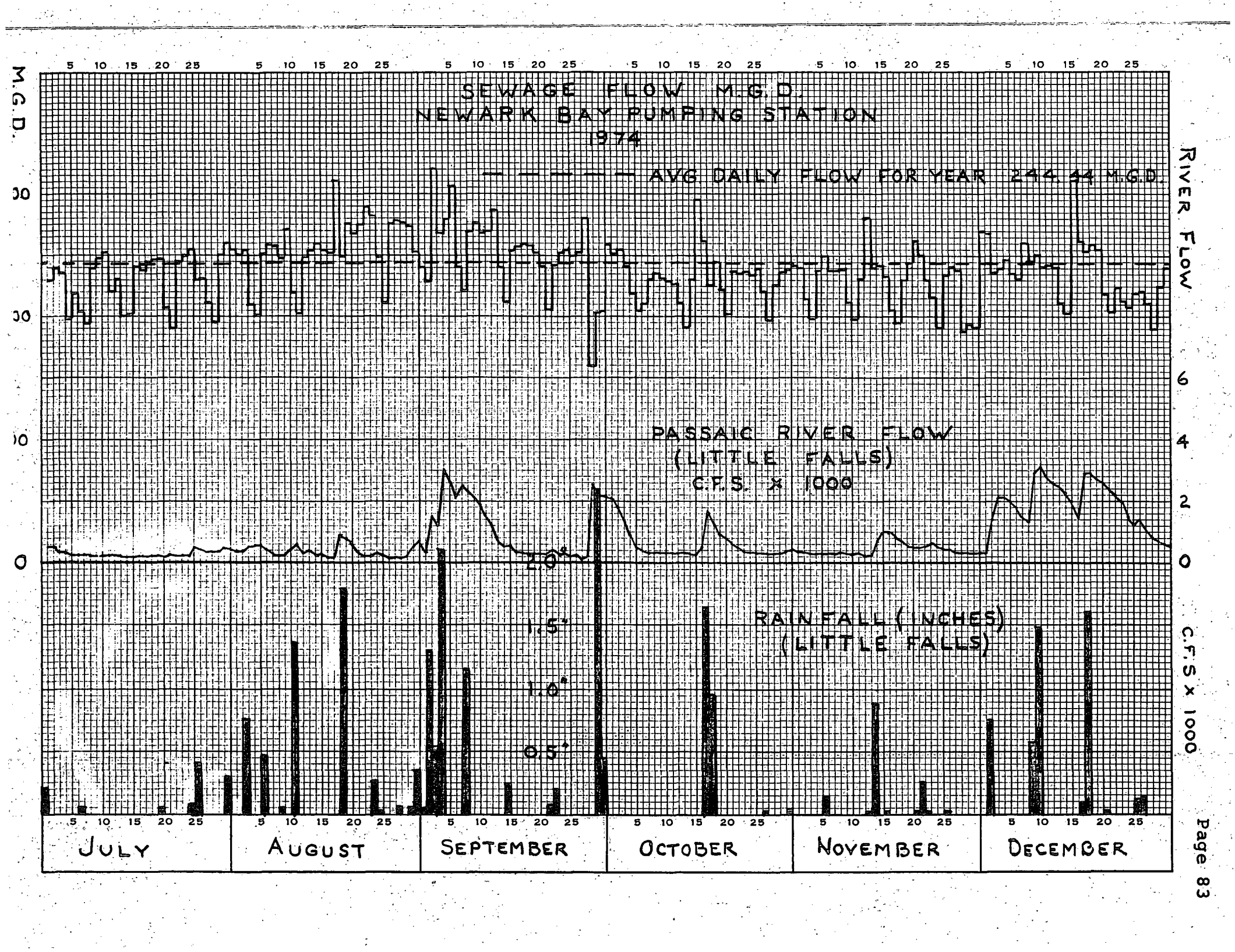
Work is proceeding with the actual construction of these long awaited facilities. Plans and specifications for them had been completed and submitted to the State Department of Environmental Protection and the Federal Environmental Protection Agency on July 8, 1970. Finally, one year later, on June 14, 1971, approval was received and the work was advertised on July 18, 1971. Bids were received on July 27, 1971, and the major portion of the work was awarded on August 27, 1971. It is expected these facilities will be complete in or about February of 1975.

Another problem we are having is with the Nordberg Radial Engines which drive two of the PVSC large pumps (200 M.G.D. each). In 1972 one of the pumps was completely overhauled and the other was expected to be overhauled in 1973. However, after putting the first engine back into operation in early 1973, we had a series of problems with piston rings, whereby they were wearing out at a rapid rate. In addition, some of the pistons started to leak and we had to order new ones. We then found out that Nordberg, now Rexnord, had stopped manufacturing these engines and had made arrangements with Cooper-Bessemer to manufacture spare and replacement parts. The only problem was the very long delivery time on parts. With the difficulties we are now having, and with the anticipated future problems of repairs, I believe these engines should be phased out as rapidly as possible. The PVSC Consultant was directed to prepare plans and specifications for the replacement of one of these engines with an electric drive as soon as possible. PVSC will keep the main parts of the engine removed as spare parts for the remaining engine.

Additional fuel will be needed for our new incinerator (to go on the line May or June), and for our chlorination facilities (to start again May 15). A further problem for the latter is the chlorine supply. We need an estimated 45 tons per day, and so far we have only been able to get a committment of 90 tons per week for the May 15 to September 15, 1975 season.

On the next pages are graphs showing the pumping of sewage at the Newark Bay Pumping Station on a daily basis for the year 1974, as compared with rainfall and river flow.


SEWAGE FLOW, M.G.D.
NEWARK BAY PUMPING STATION
1974
AVG. DAILY FLOW FOR YEAR 244.44 M.G.D.
(By-passing into Passaic River during sewer repair - see Special Report #3 - page 21)
M.G.D.
300
200
00
0
PASSAIC RIVER FLOW
(LITTLE FALLS)
C.F.S. X 1000
RAINFALL (INCHES)
(LITTLE FALLS)
2.0"
1.5"
1.0"
0.5"
RIVER FLOW
8
6
4
2
0
C.F.S. x 1000
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE


SEWAGE FLOW M.G.D.
NEWARK BAY PUMPING STATION
1974
AVG DAILY FLOW FOR YEAR 244.44 M.G.D.
M.G.D.
PASSAIC RIVER FLOW
(LITTLE FALLS)
C.F.S. x 1000
RIVER FLOW
C.F.S x 1000
2.0"
1.5"
1.0"
0.5"
RAINFALL (INCHES)
(LITTLE FALLS)
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER

At the Commissioners' Wallington Station, under the direction of J. Manney, 3,858.05 million gallons were pumped, or an average of 10.57 M.G.D. with a consumption of 521,950 kw-hrs. of electricity at a cost of 3.91¢ per kw-hr. This station pumps sewage from Wallington, East Rutherford and parts of Garfield, Saddle Brook, Passaic and Rutherford.

The Yantacaw Station, under the direction of P. Melillo, pumped 1,270.20 million gallons, or an average flow of 3.48 M.G.D., with a consumption of 218,780 kw-hrs. of electricity at a cost of 4.11¢ per kw-hr. The Yantacaw Pumping Station pumps sewage from Lyndhurst and part of Rutherford.

The Commissioners' Department of Sanitation Control, under the direction of Director of Sanitation Control, A. Goldberg, Superintendent of River Inspection, L. Cuccinello, and Chemist, E. Rys, took and analyzed approximately 4,321 samples from the Passaic River and its tributaries and from various discharges into the Passaic River and its tributaries within the Commissionrs' district. Approximately 34,416 separate tests were made on these various samples during the year. Also, approximately 157 other samples, with 578 tests were run on PVSC operations and other items, for a total of 4,478 samples and 34,994 tests, a considerable amount of work. In addition to standard tests, such as C.O.D., B.O.D., pH, total solids (mineral and volatile), suspended solids (mineral and volatile), B. coliform, chlorine residual, dissolved oxygen, odor, other tests such as chlorine demand, chromate chromium, soluble ether extracts, (oil), fecal coliform, total bacteria count, iron, acidity or alkalinity, cyanide, volativity and flammability, distillation fragments, nickel, zinc, manganese, copper, identification of fats and oils, and microscopic, physical examinations were made where special situations called for them.

Violations from 53 separate violators were eliminated during 1974 due to the work of this department (see Index List, pages ii and iii). In addition, the members of the Sanitation Control Department are constantly surveying industries in the area and keeping track of the outlets into the Passaic River and its tributaries, in order to keep its records up to date. Also, at the end of 1974 and during 1975, the laboratory will be making hundres of analyses on the inflow/infiltration work being done.

The Meter Department takes readings from approximately 72 different flow and water level meters, some daily, most weekly. The old meters are constantly maintained, and slowly are being modernized with a view of computerizing the flow meters, correlating them to water level meters with an alarm system when the two types do not check, showing a malfunction or a problem in the trunk line.

The Line Maintenance Crew, under the direction of General Superintendent T. Lazzio, Superintendent of Line J. Ferrara, and Assistant Superintendent of Line J. Kearney, keeps constant check of the line, cleaning screens, grit chambers, weir chambers, repairing manholes, and cleaning sewers.

I am ably aided in the thousand and one engineering details in the plant, on the line, and in the office, by Assistant Chief Engineer, E. Moller, and Assistant Engineer, J. Lawrence.

At this point I would like to commend the many other Passaic Valley supervisory personnel for the long extra hours they put in during the year attending to their duties. I cannot say for work beyond the call of duty, because being a Passaic Valley supervisor requires many time extra hours of work. Yet, remembering that these men do not get paid additional or for overtime, it does take some dedication to do what they did.

On December 23, 1974, Chairman Louis Bay 2nd ended his tenure as Chairman and Commissioner on the board of the Passaic Valley Sewerage Commissioners. I wish to salute a wise and dedicated leader who helped steer the PVSC through many tough financial administrative problems. His ability to see to the heart of the many situations that developed and his dynamic forcefulness whereby he called it as it was, will be remembered by all who served with and under him.

I wish also to thank Chairman Walter Davis, Vice Chairman Robert Davenport, and Commissioners Charles Lagos and Michael Giuliano for their understanding and guidance in the tremendous operating and administrative problems that exist in an organization the size of PVSC.

At this time I wish to welcome our newest Commissioner, Joseph M. Keegan, to a job that could require a considerable amount of his time.

PART II

VIOLATIONS AND ELIMINATIONS

The following are reports on pollutional discharges into the Passaic River within the Commissioners' jurisdiction (the watershed from the Great Falls in Paterson to the mouth of the river at Newark Bay) during 1974, together with reports on how they were eliminated during 1974, and the names of the River Inspectors assigned to investigate the pollution:

accident

Violation and Elimination - Armour Dial, Inc., 179 Entin Road, Clifton, N. J.
August 9, 1974 (F. Wendt)

On August 9, 1974, Mr. J. Hesler, Manager of Corporate Environmental Control Department of the above company, called the PVSC informing that an accident had occurred during a delivery of a biodegradable anionic detergent (Arco Chemical Co. Ultrawet KSX52) to their plant.

During the transfer of this material from the truck to the storage tanks, the trucker's hose ruptured, and although we are informed that the discharge pump was turned off immediately, some product was spilled onto the unloading pad.

Plant personnel began recovery operations with liquid vacuuming equipment, recovering a major portion of the spill. We are informed that, based on the truck's known weight and volume of product, together with the volume in the storage tank and amounts recovered, it was calculated that a maximum of 225 gallons had spilled, of which a minimum of 150 gallons was recovered, leaving a maximum of 75 gallons as lost.

The unrecovered material traversed an unpaved area to a catch basin, thence to the Entin Storm Sewer, thence to the Passaic River. The catch basin opening was sand bagged and the gravel in the unpaved area leading to the catch basin was treated with a sorbent granular material to absorb any residual detergent. The PVSC inspector reported that there was no visible evidence of the spill in the river at approximately 2:00 P. M. on August 9, 1974.

Violations and Eliminations - Atlantic Chemical Corp., 10 Kingsland Road, Nutley, N. J.
March 28, 1974 (A. Dondero)

On Thursday, March 28, 1974 at 10 A.M., Inspector Dondero noticed a black substance in Third River. He traced it back to a 48 inch storm drain coming from the premises of the Atlantic Chemical Corp.

Inspector Dondero called the pollution to the attention of C. Danziger, Vice President, and together they traced the pollution to industrial waste overflowing from building #19, across a black top area and draining into the soil and apparently infiltrating into the 48" storm drain thus reaching Third River.

When they discovered the overflow was due to a sewer blockage, maintenance men were instructed to clear the blocked sewer. At Mr. Dondero's suggestion sump pumps were installed to pump around the clogged line to another waste pit thus halting the pollution.

Mr. Dondero again visited this company on Friday, March 29, at 9:45 A.M. and saw the sump pumps still controlling the pollution while the maintenance men were working to clear the clogged lines. The sewer was cleared by Monday, April 1, 1974, at Mr. Dondero's next visit.

* * * *

April 25 - May 13, 1974

accident

At 6:50 P.M. on April 25, 1974, an explosion and fire occurred at this plant. Large storage tanks of chemical dyes, solvents and acids at the back of the plant were ruptured and these were washed or infiltrated into Third River, a tributary of the Passaic River. The fire was under control by 8:00 P.M., but firemen continued to pour water onto the chemical tanks to prevent additional explosions and to disperse escaping gases. As of the end of April, polluting runoff continued into Third River.

A sample taken of runoff on May 8, 1974 still indicated pollution, but the inspector reported that on visits made May 13, 14, and 17, he found no evidence of any ground runoff into Third River. The pollution was considered eliminated as of May 13, 1974.

Violation and Elimination - A. T. & T. Long Lines, West Passaic Street, Rochelle Park, N. J. 07662
August 26 - October 24, 1974 (J. Perrapato)

At about 1:40 P.M. on August 26, 1974, Inspector Perrapato noticed a green color in Sprout Brook. He traced this back to a pond on the property of A.T.& T. Long Lines in Rochelle Park. The inspector contacted Mr. R. Haley (Operations Supervisor) and showed him the pollution. Mr. Haley stated he didn't know where the color came from and that their only connection to the pond was a water line by which they run clean water to the pond. The only other source of water was drainage during rain.

Subsequently PVSC learned that the pond was periodically dosed by A.T.& T. with an algaecide "Cutrine", which contained 1.1% copper as the toxic material.

On October 24, Inspector Perrapato reported that the pond had cleared itself. On October 29, Mr. Lubetkin wrote to A.T.& T. Long Lines, informing them that they should discontinue the use of Cutrine until a proper dose could be found, as to not adversely affect tributary streams, or until a non-metallic bio-degradable material can be used as an alternate algaecide.

Violation and Elimination - Central Waste and Mill Service, 395 President Street, Saddle Brook, N. J. 07662
October 14, 1974 (J. Perrapato)

On Monday, October 14, 1974, at 2:30 P.M., while passing Schroeder's Brook, Inspector J. Perrapato noticed that the brook looked milky white. The Inspector took a sample and then traced this pollution to the source, which was a six inch pipe to the brook just north of President Street in Saddle Brook.

The pipe came from a catch basin in the macadamized yard of Central Waste and Mill Service. There, Inspector Perrapato noticed paint equipment being washed with the washings running into the yard drain, thence to Schroeder's Brook. The sample, when analyzed, had a C.O.D. of 4540 mg/l, a turbidity of 18,200 J.T.U., and total organic carbon of 1380 mg/l, thus it can be seen this was very polluting.

Inspector Perrapato spoke to Mr. Engravalle, owner of the company, and informed him he was polluting Schroeder's Brook. Mr. Engravalle agreed to stop (at about 3:00 P.M.), and the inspector reported that the stream was clear at about 4:30 P.M.

Mr. Lubetkin wrote to this company, informing them they had violated the law, & directing that they inform PVSC as to how they would clean the paint equipment in the future so as not to pollute. They were also informed that since their storm outlet could be a source of pollution, they may need a NPDES permit, and that they should contact the USEPA concerning this. No reply was received by PVSC

Violation and Elimination - Chemplast, Inc., 250 Goffle Road, Hawthorne, N. J.
May 23-24, 1974 (T. Costello)

Inspector Costello observed an oily film in Goffle Brook, a tributary of the Passaic River, and traced it to the Chemplast Inc. property. The inspector found an accumulation of oil, plus some oil soaked rags, in an alley adjacent to the building. Water draining from the high ground at the rear of the plant was washing the residual oil into a nearby street catch basin (in Goffle Road), thence to Goffle Brook through a 15-inch storm outlet.

The Supervisor contacted by the inspector denied that anyone connected with the plant was responsible for the oily waste, but he agreed to clean up this source of pollution.

On the following day the oily ground and rags were dug up and carted away, eliminating this source of pollution.

Violation and Elimination - City of Clifton
November 15, 1974

PVSC received a call from Mr. E. Bush, Foreman of the Clifton Sewer Department, informing that Clifton was replacing a line in Bradley's parking lot. The existing sanitary sewer was considered beyond repair and a new 16" plastic lined pipe was being installed. During the start of the installation, sewage was being by-passed to Third River. However, a temporary line was installed on the surface to divert the sewage to the sanitary sewer downstream from the break. This was done the same day after the initial cleaning. No pollution occurred after the first day, and the construction work on this sewer (including the length through the Data Process Company site) was completed on December 28, 1974.

Violation and Elimination-Costa's Trailer Court, Route 46, Lodi, N. J. July 2, 1974 (J. Perrapato)

Inspector Perrapato received a call, at 10:30 P. M. on July 2, 1974 that an odd odor was coming from Millbank Brook in the area of Massey Street. Inspector Perrapato reported that upon checking he detected a strong odor of kerosene. He sampled four points in Millbank Brook: 1) Union and Main St.; 2) Church Street; 3) Church and Massey Street; 4) Adjacent to Costa's Trailer Court.

He noted that above Costa's Trailer Court the odor in the water was not detectable.

Upon interviewing a tenant from the trailer camp, Inspector Perrapato was told that a spill had occurred which was then washed into the brook. Details were not available. Because of the late hour, the inspector returned the following day(July 3) and contacted Mr. R. Pristly(Supt. in charge of the court).

Together they questioned several people and finally spoke to the owner of a trailer who stated that he had received a delivery of fuel into his 150 gallon tank and during this delivery approximately 5 gallons overflowed to the ground and was thence washed to Millbank Brook. All odor and slicks were gone on July 3, 1974.

Violation and Elimination - Curtiss - Wright
1 Passaic St., Woodridge, N.J. 07075
March 21 to 26, 1974 (J. Perrapato)

There are two 150 gallon oil tanks underground with #6 fuel oil. A workman attempted to pump the oil from one tank to the other (not knowing the second tank was full), allowing the full tank to overflow, spreading oil over the ground which flowed into a sump between the tanks. The workman had left the area and the spill was not noticed at the time. A sump pump pumped about 60 gallons of the oil into a ditch which ran into Feld's Brook, and it was then that some workmen noticed the oil running into the yard ditch.

Coastal Services was called by Curtiss - Wright. They barricaded two points on Feld's Brook and they proceeded to remove the oil. By Monday March 25, the stream looked good. Coastal Services then cleaned the exposed rocks and banks of the tar like substance. Clean up work was completed March 26, at 2:30 P.M.

Violation and Elimination - Diamond Shamrock Chemical Company, Harrison, N. J.
August 17, 1974 (J. Colello)

As a result of the severe rainstorm and flash flood, approximately 900 gallons of No. 6 fuel oil were displaced from an underground storate tank at approximately 4:30 P.M. on Saturday, August 17, 1974. Rainfall measurements in Harrison showed approximately 2 inches in 20 minutes and 4.5 inches in an hour.

The storm flooded the main plant and all surrounding plant buildings, and power failures were experienced. Plant power loses resulted from electrical equipment that was covered with water and distribution mains which were were shorted out. All plant telephones and public address systems were also out of service.

By 7:00 P.M. the flooding had subsided to a point where plant personnel were able to attend to the oil problem. A previously constructed metal collar dam was installed over the storm sewer opening. The source of the oil was then found to be an underground storage tank located near the front of the plant. It was observed that most of the displaced oil had actually entered the basement of a nearby building.

After containing all oil, clean-up operations started at daybreak on Sunday, August 18. Coastal Services, Inc. was called to remove the contained oil in the storm sewer catch basin and building basement. PVSC, the U. S. Coast Guard, and the City of Harrison, sent representatives to observe clean-up operations and to inspect the river outfall.

By 4:00 P.M. Sunday, most of the oil was cleaned up and removed and the final clean-up was concluded Monday morning.

Of the estimated 900 gallons of oil displaced, approximately 850 gallons were recovered and accounted for. Plant representatives estimate that up to 50 gallons of oil may have actually entered the river.

To prevent a recurrence, the company stated they were making plans to extend all entries to this oil tank at least five feet above grade (about two feet above the most recent high water mark). However, this was not done because of the location of the entries; instead the company rethreaded the entries and had caps put on the pipes.

The company was fined $600. by the U. S. Coast Guard. Although Diamond Shamrock protested that the accident was an "Act of God" resulting from a record rainfall in the area,and not from any act of omission or commission on the part of Diamond Shamrock, they waived their statutory rights for a hearing and paid the $600. fine.

Violation and Elimination - Dowling Oil Company, Ridgefield Park, N. J.
December 12-13, 1974 (W. Fleming)

At approximately 5:00 P.M. on Thursday, December 12, 1974, the N. J. Bell Telephone Co. received an oil delivery from the Dowling Oil Company at the N. J. Bell Clifton office at 354 Allwood Road. The delivery man allowed the #2 oil to overfill the tank and spill over the road. Approximately 50 to 75 gallons of the oil ran down Allwood Road for approximately 300 feet to a catch basin, thence to Allwood Ditch to Allwood Brook, Nichols Pond, Third River, thence to the Passaic River.

The Clifton fire department was called by N. J. Bell and they, in turn, notified PVSC. They washed down the roadway and spread sand over the area.

At 11 A. M. on December 13, a crew from Dowling Oil Co. arrived, and spread an oil sorbent over the entire area an swept up the residue. They also dispatched a pump truck and pumped out the catch basin, and by 3:30 P.M. the clean-up work was completed.

On Monday, December 16, a heavy rain occurred and washed the remaining residual oil from the area and out of the ditch.

Violation and Elimination - Essex Chemical Company, 330 Doremus Avenue, Newark, N. J.
May 2, 1974 (J. McLaughlin)

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On May 2, 1974, Inspector McLaughlin made his inspection of this company, taking samples of their outlets for a routine inspection. Analysis revealed that their yard drain outlet was polluting. The inspector contacted Joseph Kelly, Plant Manager, and investigation revealed that some truckers, despite orders to the contrary, had washed some trucks over a yard catch basin. To prevent this type of thing from recurring, the yard catch basin in the truck area was plugged and the washing of trucks was moved to an area whereby the waste enters the sanitary sewer.

Violation & Elimination - Fair Lawn Industries, 20-21 Wagaraw Road, Fair Lawn, N. J.
January 16 - April 26, 1974 (T. Costello)

In December 1973, a pollution was reported concerning a break in an oil line from the boiler room of this plant. Since there was a drain from the boiler room to the river, Mr. Lubetkin directed the inspector to check very closely any source of discharge to this boiler room outlet.

On January 16, 1974, Inspector T. Costello reported that boiler blowdown went to a blowdown tank, and thence overflowed to the storm sewer and through outlet #4 to the Passaic River. This occurred six times daily, each for a duration of about three minutes.

A sample was taken and, even after dilution with the cooling water also coming from this outlet, a high pH was recorded.

Inspector Costello informed Mr. George Jaqua, President, on January 23, 1974, that this material would have to be repiped to enter the sanitary sewer, as it was polluting.

On February 8, 1974, Mr. Lubetkin wrote to this industrial complex, confirming Inspector Costello's report and directing them to halt the pollution at once. On February 13, Mr. G. Jaqua replied that they were taking immediate steps to properly engineer the removal of boiler blowdown from the storm main to the sanitary sewer, and he would submit a time table as soon as the engineering problems had been solved.

Inspector Costello reported that pipe and fittings were delivered April 3, 1974, and work on installation and reconnecting it to the sanitary sewer was completed April 26, 1974, thus eliminating this violation.

Violation and Elimination - Fair Lawn Water Pollution Control Facilities, 2-01 Saddle River Road, Fair Lawn, N.J.
March 13, 1974

This activated sludge plant treats an average daily flow of 2.7 million gallons per day and discharges its chlorinated effluent to Saddle River, a tributary of the Passaic River. The sludge is digested and dried in lagoons. The licensed operator is Donald Eelman. The Commissioners monitor the discharge from this plant routinely.

(continued)

Fair Lawn Water Pollution Control Facilities (continued)

In 1974, of 34 samples, six samples taken on January 15, February 5, June 26, July 10, October 17, and November 7 were not up to standards, having slightly high B.O.D. and turbidity. One bad sample (June 26) had B.O.D. of 129 mg/l, turbidity of 68 units, and suspended solids of 54 mg/l.

Mr. Eelman explained that this was caused by the heavy rains which diluted the solids concentration in his aeration tank and affected final clarification. In all cases the plant recovered and the flow returned to normal.

Violation & Elimination - Fields Plastic and Chemical Co., 199 Garibaldi Avenue, Lodi, New Jersey 07644
October 3 - 24, 1974 (J. Perrapato)

While checking Millbank Brook termperatures, Inspector Perrapato found the water temperature at Garibaldi Avenue to be 90°F, whereas it was 55°F as it went underground by Fields Plastic. Upon checking, the inspector noted steam coming from a pit at Gibraltar Plastics (adjacent to Fields Plastic) and noted a one-inch pipe coming from Fields to the pit, thence to the brook.

When the inspector asked Mr. M. DeServo, foreman of the Fields Plastic plant, about a hot discharge, he denied that there was any such discharge. The inspector then showed him the line which had a hot liquid of approximately 170°F raising the temperature of the brook, causing thermal pollution. Mr. DeServo said that he would repipe the water away from the brook, and requested 3 or 4 weeks time.

Inspector Perrapato reported that the discharge was reconnected to the sanitary sewer on October 24, 1974, thus halting the pollution into the brook.

Violation and Elimination - Forest Hill Apartments, 71 1/2 Belleville Avenue, Bloomfield, N. J.
December 1-13, 1974 (M. Cordasco)

On November 26, 1974, the PVSC received a letter from the Forest Hill Tenants' Organization (dated November 23, 1974), stating that due to inadequate facilities flooding of the boiler rooms was a frequent occurence, and as a result the management pumps oil-laden water into the town sewers (thence to PVSC).

On December 3, Inspector Cordasco investigated the complaint and found that the boiler at VanWinkle Street Boiler Room 7 had leaks in the hot water feed and return line and that the management was in the process of repairing them. A trench had been opened from the boiler room from the boiler room across Van Winkle Street to the apartments on the other side of the street (approximately 180 feet).

Forest Hill Apartments (continued)

Because of the open trench and the heavy rains, on Sunday, December 1, 1974, the water backed up and flooded the #7 boiler room and sump pumps were installed to pump the water to a catch basin, thence Second River, a tributary of the Passaic River. The inspector reported no visible signs of oil, but a sample was taken to the PVSC laboratory for analysis. Since there were both high turbidity and solids (mud from the ditch) it was classified as polluting. By December 13, the pipes were repaired and the ditches backfilled.

All the boiler rooms are below grade with sump pumps which would pump any material up to grade, thence the catch basin, thence the river. The only time oil would get into the river is during a flood if,at the same time.there was an oil leak. This will be kept under surveillance during 1975.

Violation and Elimination - Gaess Environmental Service Co., 253 River Drive, Passaic
July 25, 1974 (R. Goldstein)

Mr. J. Kearney contacted the River Inspection Department about a greyish material in the Passaic River near Van Houten Avenue. Superintendent L. Cuccinello and Inspector R. Goldstein traced it to the Gaess Environmental Service Co., Passaic.

PVSC was informed that a payloader had accidentally knocked over a 50 gallon barrel of cutting oil, which then broke open and a small amount spilled over the bank into the river.

Violations & Eliminations - G.A.F. Corporation, 34 Market Street, Paterson, N. J.
September 15, 1974 (L. Tateo) accident

On Sunday evening at about 8:00 P.M. a fire broke out at this G.A.F. Corp. factory. This plant manufactured color pigments. In fighting the blaze, it was necessary for firemen from 16 fire companies to pour a massive amount of water into the plant area. Unfortunately, the water, dyed various colors, went to street catch basins, thence to the river, causing a blue color in the Passaic River. The violation was eliminated by September 16, after the fire was under control.

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G.A.F. Corp. (continued)
October 24-25, 1974

Another fire occurred at this plant on October 24, 1974. The fire, which was the third this year (others June 28 and September 15), completely destroyed the remaining plant, including that part that was being rebuilt.

The water used to bring the fire under control washed large amounts of organic pigments into the Passaic River, and at various times, blue, purple, and red could be seen in the river.

All fires were of suspicious origin, and company officials have decided to end operations in Paterson and will not rebuild.

Violations & Eliminations - Garden State Paper Co.
River Road, Garfield, N.J.
March 6, 1974 (J. Perrapato)

The screen protecting the river crossing of the industrial sewer was covered with dirt,stones etc. which were causing a problem in the plant.

At 8:20 A.M. on March 6, 1974, the valve to this line was closed, allowing by-passing while a contractor cleaned the area in front of the screens The blockage was eliminated and the valve opened at 8:50 A.M. Total time of by-passing was 30 minutes.

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August 12, 1974

At 2:20 P.M. on August 12, Inspector Perrapato, while on routine inspection of the Passaic River, noticed a sudsy material emanating from the Garden State Paper Company's outlet. After taking a sample for the laboratory, he contacted Mr. Surydan, Plant Maintenance Supervisor, and informed him of the violation.

The discharge was an overflow from their manhole entering the river crossing, which then entered the PVSC trunk sewer in Clifton.

Evidently, a blockage of some type raised the hydraulic level so that it was then overflowing into the river. PVSC personnel checked the entrance to the trunk sewer to be sure that it was not caused by a back-up due to a problem on the Clifton side. This checked out satisfactorily.

Mr. Surydan had a man use a piece of pipe to poke around at the base of the manhole to dislodge some debris from around the exit pipe, thus lowering the water level in the manhole so that the overflow to the river was halted.

Garden State Paper Co. (continued)

Mr. Perrapato told them that the solution was only temporary and that the debris should be removed and, if necessary, the crossing cleaned. Mr. Surydan stated that this would be done, but Inspector Perrapato reported that upon his revisit the next day, the debris was still there, and Mr. Surydan was again directed to clean the manhole and line, if necessary.

At approximately 2:30 P.M. on August 22, Inspector Perrapato noticed a truck from a pipe cleaning company at this manhole doing work. Upon checking, Inspector Perrapato learned that trouble had started at 4:00 A.M. that morning with high water in the manhole, and Mr. Surydan decided to call the pipe cleaning people (a suggestion made by PVSC more than a week earlier, but which was ignored).

A jet was used to bring the water level down again and Mr. Surydan promised that the line would be properly cleaned during the Labor Day weekend plant shut down.

On August 22 the river crossing was again jetted to increase its capacity, and finally on September 2,during the plant shut-down, the line was cleaned (work occurred between 8 A.M. and 4 P.M.)

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October 19-31, 1974

Intermittent pollutional discharges were caused by spills of materials,which subsequently reached the storm sewer through catch basins, during this month. Previously, some pollution had occurred when the industrial sewer had overflowed into the storm outlet.

Because of this, on September 13, Mr. Lubetkin wrote to the Garden State Paper Company, requesting that they install a valve in the industrial sewer as an emergency by-pass instead of the overflow, whereby pollution occurred with no one aware of what was happening.

On Saturday evening, October 19, the 30,000 gallon storage paper fiber tank, set up on top of the building, let go. The paper fiber flowed like lava and crossed River Road into the Passaic River and also covered their yard. Garden State personnel cleaned up the mess with the aid of an outside contractor. Using barricades, bales of paper, bulldozer vacuum trucks, etc., it took until October 21 before most of the material was cleaned up.

PVSC had received no reply to the letter of September 13, so Mr. Lubetkin wrote another letter on October 24, pointing out the recent violations (which were of a different type than that which would have been cured by the valve), and requesting a report on these violations, and reiterating the request of September 13, further stating that if no reply was received, the matter would be turned over to the PVSC legal department.

Garden State Paper Co. (continued)

Mr. Lubetkin received a telephone call the next day, followed up by a letter dated October 25, 1974, explaining that they had not ignored the letter of September 13, but had been studying the possibility of sealing up the overflow, versus the idea of putting a valve in the line, and agreed that the valve was the better way to go. (On October 29, PVSC was sent a copy of an order, dated October 16, showing they had ordered the valve). They had been promised delivery of the valve by December 20, 1974.

The letter also explained the pollutions due to spills in October. One of their paper machines was down for over six weeks on a major rebuild. On putting it back on line, extensive adjustments on instrumentation had to be made, and for about 10 days they had been fighting to get the machine operating properly. During that period there had been many upsets which resulted in spillages onto the ground. They further found one of the ground drains had been connected into the storm sewer. This was plugged the night of October 24. Since the machine is now operating, and the drain is plugged, they expect no further pollution.

A sample taken October 31 of their discharge indicated that the pollution had been abated as of that date

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November 3, 1974

Another minor pulp spill occurred at 3:00 A.M. on Sunday morning, November 3, 1974, of which some entered the Passaic River. PVSC is still waiting for the Garden State Paper Co. to install the overflow valve mentioned in the October report.

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December 26, 1974

The PVSC received a call from Mr. W. Martin, Plant Engineer, explaining that at approximately 11 P.M. on December 26, a sudden surge in their discharge caused the waste of the Garden State Paper Company to overflow for approximately ten minutes. The waste went through the 10 inch line into the Passaic River.

The inspector noted that on December 27, while checking to see no further overflow occurred, excavation was in progress to install the valve on the overflow line which had been promised in October 1974.

Violation and Elimination - Garfield Manufacturing Company, 10 Midland Avenue, Wallington, N. J. 07057
June 6 - August 24, 1974 (F. Cupo)

On June 6, 1974, Inspector Cupo made an inspection of this company. He discovered that one of four active pipes was covered with debris, making it impossible to sample. Two others were discharging and were sampled, and the fourth was a 2-inch boiler blowdown pipe which discharged at 7:00 A.M. for a short time. Also, there were three other visible, but inactive, pipes. The samples of the two cooling water discharges were satisfactory, but the boiler blowdown was polluting, and Inspector Cupo so informed Mr. J. Minaberry, Vice President, Mr. Lombardi, Plant Manager, and Mr. LaRose Jr., Safety Manager. He also told them they must uncover the outlet which was inaccessable to him so that he might sample the discharge. Mr. Cupo reported that they would comply with PVSC directions and that they intended to make corrections to the boiler blowdown about July 15, 1974, when the plant was shut down for vacation.

On July 2, 1974, Mr. Lubetkin wrote to this company confirming that their boiler blowdown was polluting, and directing them to make accessable the covered outlet. Mr. Lubetkin also informed them that they must have a NPDES permit from the USEPA in order to discharge into the Passaic River.

Although no reply was received by PVSC, Inspector Cupo reported that he had questioned Mr. Bauer, a Vice-President, on July 22, and was told that the equipment delivery was causing the installation delay. He gave Inspector Cupo a copy of the report on a new Fulton Blowdown Separator, dated July 19, 1974, from the Fulton Boiler Works of Pulaski, New York.

On August 24, 1974, Mr. LaRose informed Inspector Cupo that the work was completed. On August 27, 1974 at 2:00 P.M., Mr. Cupo inspected the work and reported that the boiler blowdown installation was completed and is now being discharged through a separator, into the sanitary sewer, thus eliminating this violation.

Inspector Cupo also reported that the #3 outlet was now uncovered and it was sampled by him. Analysis showed the discharge satisfactory. Inspector Cupo reported that Mr. Bauer informed him that they had applied for a NPDES permit.

Violation and Elimination - General Manufacturing Corp., 20 Arnot Place, Lodi, N. J.
June 25 - July 15, 1974 (J. Perrapato)

At about 10 A. M. on Tuesday, June 25, Inspector Perrapato noticed oil in Millbank Brook along Graham Lane, Lodi. He found that the rain was carrying the oil into Millbank Brook at about Main Street, Lodi, and he was able to trace it back to the yard of General Mfg. Corp. The company had put oil soaked metal shavings in their yard, and during a rain, the oil was washed into the Millbank Brook. Mr. Perrapato, together with Supervisor L. Cuccinello, and General Superintendent,T. Lazzio, spoke to Mr. L. Ponti, Shop Sup't. and pointed out the oil pollution, and directed him to take steps to halt this pollution at once.

On July 2, 1974, Mr. Lubetkin wrote to this company, pointing out that oil pollution was not only a violation of N. J. Statutes, but was also a Federal offense and directed them to take immediate steps to halt this pollution.

On July 3, 1974, Mr. I. W. Stratmore, Plant Manager, replied that they had taken immediate steps to eliminate the conditions contributing to the pollution by ordering the use of water-tight containers so that no oil could get to the ground.

Inspector Perrapato reported that as of his inspection on July 15, 1974, that a larger water-tight metal canister had been installed and all metal shavings had been removed from the ground area.

The canister is the type that is removed as it is filled and replaced by an empty one. This work is done by Central Wash and Mill Service of Saddle Brook and A-I Hauling Incorporated of Secaucus.

Violation and Elimination - H & H Realty Company and T. W. Machine Co., 176 Saddle River Avenue, Garfield Park Section, South Hackensack
June 6 - August 28, 1974 (J. Perrapato)

At the instruction of Mr. Lubetkin, the River Inspection department started an intensive campaign to locate the causes of the increase in coliform count in Saddle River.

While making this check, Inspectors Cupo and Perrapato detected a sewage odor along the banks of Feld's Brook at the Hendricks Brothers' property in the Garfield Park Section of South Hackensack. They noted that at the rear of the T.W. Machine Co., Inc., building, sewage was leaking through the ground and entered Feld's Brook, a tributary of Saddle Brook. Inspector Cupo contacted the owner Mr. J.S. Wikiel and together they flushed the toilet and Inspector Perrapato noted that the flow increased while this was done. The owner reported that he had reported the matter to Mr. Hendricks, the owner of the property that the septic tank system was overloaded.

H & H Realty and T. W. Machine Co. (continued)

Mr. Lubetkin wrote to T.W. Machine Co. on June 11, and Hendricks Brothers on June 12, informing them that they were polluting, and directed them to halt the pollution at once.

Mr. Lubetkin on June 12, also wrote to the Township of South Hackensack and pointed out that a lease with Lodi to take care of the sewage from their Garfield Park Section was approved in 1968 and, after a trunk sewer was built, that the PVSC received a letter (March 1971) stating that the facilities were sufficiently complete to allow connections by users beginning April 1, 1971, and that the PVSC was shocked that there were still unconnected facilities in this area. Mr. Lubetkin also informed South Hackensack that they should enforce ordinances requiring all residents of this area to connect into the sanitary sewer. Inspector Perrapato later reported that the visible seepage had been stopped by mounds of soil, but of course, this did not stop the pollution.

On June 17, Mr. William Hendricks of Hendricks Bros. wrote (on T. W. Machine Co. stationary) that they have a delivery of pipe promised for the following week and they would then run a sewer line to totally eliminate this problem. He expected the job to be completed in about three weeks from delivery.

On July 3, Mr. J. Perone, Township Clerk of South Hackensack, wrote to PVSC, enclosing a copy of a letter dated July 1, 1974 from H & H Realty Co., Inc. (Hendricks Brothers?) in which they stated that the violation had been corrected. He also stated that they had ordered the pipe to make the sewer hook-up.

On July 9, Mr. Lubetkin wrote to both, Mr. William Hendricks and South Hackensack, informing them that the violation had not been corrected. Mr. Lubetkin requested an up-to-date report from Mr. Wm. Hendricks, and in addition, requested from South Hackensack any information they had concerning the names of other users of the sewer system and those users in the area that had not connected to the system (still using septic tanks).

Inspector Perrapato reported that work of connecting into the sewer system started July 15, 1974, and was completed as of his inspection on August 28, 1974. Approximately 900 feet of 8-inch transite pipe was used as the trunk, with 4-inch laterals from each building. In addition, two manholes and cleanouts were installed in the 900 ft. The Levimatic Pkg. System, T. W. Machine Co., Neilson Welding Co., Drew Marco Air Conditioning Co., H & H Realty Office, General Fabricators Tool Shop, and National Auto Body Shop were connected to the sewer.

Violation and Elimination - I.T.T.
100 Kingsland Road, Nutley, N.J.
March 5-6, 1974 (A Dondero)

On Tuesday March 5, 1974, at approximately 2:30 P.M. an accidental spill of #6 oil (est. by I.T.T Plant Engineer Mr. Bowdler at 5 to 6 gallons) occurred while transferring oil from one tank to another. The oil overflowed into a 4' x 4' concrete trench located between the two storage tanks, then flowed through a trench drain pipe to a storm drain manhole, thence to Third River via a sluiceway. On Wednesday, March 6, at 10 A.M., Inspector Dondero, while on routine inspection, noted the oil slick emanating from the sluiceway to Third River.

When Mr. Bowdler was contacted he had his personnel clean the drain pipe, storm drain manhole, and the drain pipe from the trench to the storm drain manhole was plugged with concrete by 3:00 P.M. on March 6, thus should there be another spill the material would be contained until cleaned up.

Violation and Elimination - Keller Oil Company, 110 Madison Street, East Rutherford, N. J.
September 27, 1974 (F. Cupo)

On September 27, at 12:45 P.M., Inspector Cupo noted a spill of a heavy black material in the plant yard of this company. The inspector contacted the plant manager, Mr. K. Moore, and pointed out to him the proximity of the spill to a storm catch basin, and noted that if the material was not cleaned up, there would be a pollution through the Madison Street Storm Sewer, during the next rain. Mr. Moore was very cooperative and investigation revealed that a service man, in need of a drum, had emptied a partially filled one onto the ground. Mr. Moore directed his personnel to clean up the material at once. The inspector rechecked the area again at 2:00 P.M. and reported the spill had been cleared.

Violation and Elimination - Ken Monk Construction Co., 116 Route 17, Upper Saddle River, N. J.
May 22, 1974 (M. Tomaro)

Inspector Tomaro noticed oil films in Sprout Brook and traced it upstream to Ken Monk Construction Co. The inspector contacted Mr. J. Berry, Superintendent of the company, and Mr. Berry showed the inspector a concrete pump which was working about 25 feet from a tributary stream. Mr. Berry told the inspector that the company was constructing a new building on the site, and a 3/4" rubber hose on the hydraulic system of the pump had ruptured, losing about five gallons of hydraulic oil. The hose was repaired in ten minutes, but the oil reached the brook.

Violation & Elimination - Kreisler Industrial Corporation, 180 Van Riper Avenue, Elmwood Park, N.J.
April 22 - 23, 1974 (J. Perrapato)

On Monday, April 22, at about 8:35 p.m. a Mr. Fazio called the Elmwood Park Police who, in turn, notified Mr. J. Vietrano, Health Inspector, that Fleischers Brook, a tributary of the Passaic River, was colored yellow-green.

Inspector J. Perrapato was contacted the following morning and was asked to check the Kreisler Plant.

Together with Mr. W. Philpot, Maintenance Superintendent of Kreisler Industrial Corp., they inspected the plant, and Mr. Perrapato found an open tank (approximately 50 gallons) with material that matched the described yellow-green color. (A sample was shown to the Fazio's and they stated it appeared to be the same.)

Mr. Philpot then told the inspector that leaks had developed in their boiler water system and their contractor had put this tracer dye material into the boiler water to attempt to locate the leaks. There was also a valved 2 inch by-pass line to Fleischers Brook and an employee had left this line partly open allowing the dyed boiler water to flow into the river. This had been closed at the time of the inspector's visit, thus halting the violation.

Violation and Elimination - Krueger Bros. Inc., Arnot & Main Street, Lodi, N. J. accident
November 9 - 14, 1974 (J. Perrapato)

A massive fire which started at about 2:30 P.M. at Krueger Bros., Inc., a paper warehouse on November 9, 1974, raged out of control for several hours and completely destroyed the Lodi Industrial Complex located at Arnot and Main Streets. Other businesses destroyed were IHE Floors, VIP Auto Leasing, Inc., R. T. Associates (a real estate office), PTC Inc. (a trucking firm), Home Decor Associates, Inc., Universal Pad and Tablet Corp., and Allied Plastics.

Of necessity, water used to control the fire entered and polluted Saddle River.

Samples taken of the River showed the results of the drainage November 10 and 14, but a sample taken November 21 showed the River to be back to normal.

Violation & Elimination - Borough of Lodi, Meta Lane Pumping Station
April 11, 1974 (F. Cupo)

On April 11, 1974, Mr. Della Penta, Superintendent of the Sewer Department in Lodi, called Inspector F. Cupo, and informed him that they had a motor breakdown at the Meta Lane Pumping Station and they were forced to by-pass raw sewage into Millbank Brook. The by-passing started at 3 a.m. and was halted at 11:35 a.m. when repairs were completed.

* * * * *

December 26, 1974

At approximately 11 A.M. on December 26, 1974, Inspector Perrapato noticed a discharge going through the 8-inch by-pass line from the Meta Lane Pumping Station to Millbank Brook. Both pumps had failed allowing the sewage to overflow.

Mr. Della Penta, Sewer Department Superintendent, and Mr. K. Job, Borough Engineer, met with Mr. Perrapato at 2 P.M. and told him that they had received permission to bring repairmen in to repair one pump immediately and then to make repairs on the second pump.

By 5 P.M. one pump was operating and the station was no longer by-passing. The second pump is still to be repaired.

Violations & Eliminations - Marcal Paper Mills, Inc., Elmwood Park, N. J.
June 5, 1972 to September 16, 1974 (J. Perrapato)

All pollution from this company to the Passaic River from their industrial wastes and filter back-wash water was eliminated February 20, 1973, by their recycling this water. (See details in 1973 Annual Report, Page 80).

The only problem that remained was the disposal of silt from the settling lagoon where the river water is settled prior to filtration. Once a week, usually on Sunday, the silt was pumped back into the Passaic River by the company (as does the Passaic Valley Water Commission). This was considered polluting, and the company had been ordered by PVSC, on June 2, 1972, and USEPA, on June 21, 1972, to halt this practice. Since the USEPA was involved, the PVSC did not move against Marcal, but awaited results from the USEPA.

Marcal Paper Mills (continued)

On April 17, 1974, a National Pollution Discharge Elimination Permit was issued to Marcal Paper Mills. It was to be noted that a condition of this permit was that the wastewater from the water clarification and treatment process (002 discharge) was to be terminated by October 15, 1974, however, Marcal informed PVSC and the USEPA that they beat the deadline and this wastewater was re-piped to the sanitary sewer so that discharge #002 no longer is an effluent to the river. This was completed on September 16, 1974.

* * * * *

May 29, 1974

The Marcal Paper Company had a 10-inch line going to a storm sewer from their #1 plant, which went to the Passaic River via an open ditch. Many years ago this line had been boarded up to prevent pulp water from this plant from reaching the river. At about 8:00 A.M. on May 29, it was discovered that the wooden dam had broken during the night and had allowed paper pulp to enter into the storm drain and ditch. PVSC was called by Mr. R. Marcalus to explain what happened and also to inform the PVSC that they believe they caught the trouble before the pulp actually reached the river, and they intended to make immediate repairs.

Gaess Environmental Service Corp. was called to clean the storm sewer and ditch. The ditch was dammed by 1:00 P.M. and a new concrete seal was installed, plugging the 10-inch pipe by 3:30 P.M.

By 4:00 P.M. the same day all work had been completed, including the cleaning of the ditch and storm line, so that any possible violation was eliminated.

Violation and Elimination - Microfilming Corp. of America, 21 Harristown Road, Glen Rock, N. J.
January 25 - September 28, 1974 (T. Costello)

The Microfilming Corporation, after treatment, discharged its effluent into Diamond Brook, a tributary of the Passaic River. On January 25, a sample of this discharge was found to be polluting and they were so notified by the Inspector. Mr. Maynard Short, Vice President, notified the inspector that the filter in the chlorination chamber had been found dirty and was replaced January 29, 1974.

Microfilming Corporation (continued)

Mr. Costello took another sample on January 31, which was not found to be polluting, therefore, the violation was considered eliminated in the January report. However, samples, taken on February 27, were again found polluting, not only with high C.O.D., but with color, organic carbon, and fecal coliform, despite the fact that no sanitary waste was to be introduced into its discharge.

Director Goldberg contacted Mr. Short, and since it appeared that the pollution was intermittent, Mr. Short agreed to take hourly samples to see if they could find the source of the pollution.

On March 6, 1974, Mr. Lubetkin wrote to this company confirming Inspector's reports and directing them to take whatever steps were necessary to halt the pollution and to give the PVSC a time table showing when the pollution will be halted. On March 12, Mr. Karl Horwitz, President of this company, replied that they were taking the necessary steps to correct the problem. He also reported that on March 11 they repaired a broken sewer pipe which he believed was the cause of the problem. Subsequent sampling on March 13 and March 28 indicated the pollution continued. Therefore, Mr. Lubetkin again wrote informing Mr. Horwitz that the problem continued and again directed them to halt the pollution.

On April 8, Mr. Horwitz replied that they had hired Ed Grich, Inc. as a consulting service and, together with experts from Eastman Kodak Co., Industrial Pollution Division, and Power Chemical, Inc., boilerwater experts, they expected a solution shortly.

As nothing further was heard from this company, on May 20, Mr. Lubetkin wrote informing them that the pollution continued, and requesting an immediate report including a time table of abatement. On May 30, Mr. Horwitz wrote that they had applied to Glen Rock for a permit to go into their sanitary sewer. He was told, by the Mayor, that there was no provision within the Borough ordinances which would allow this, and it would take at least ninety days to get such an ordinance. Meanwhile, Mayor Benkin called Mr. Lubetkin to explain the same thing namely, that Glen Rock had no objection to taking Microfilm's "weak" sewage but had no legal means to accomplish this. Mr. Lubetkin explained that something must be wrong if everybody agreed upon a solution to halt this pollution and it had to be delayed ninety days just for the formal passing of an ordinance. Mr. Lubetkin asked if an emergency resolution could be passed to allow this connection subject to any restriction of the

Microfilming Corporation (continued)

formal ordinance in order to halt this pollution. Mr. Lubetkin confirmed his telephone statements in a letter dated May 30, and requested information as to the action taken by Glen Rock, so that the PVSC may be completely informed before deciding what action they must take.

On June 7, 1974 Mr. Lubetkin wrote again to Mr. Horwitz, explaining what he had done and requested an up-to-date report on the situation. On June 12, Mr. Horwitz replied that they will do whatever is necessary and he expected to hear from Glen Rock relatively soon that they would accept their effluent.

On June 24, Mr. John Harsanyi of Boswell Engineering Co. (Engineers for Glen Rock) wrote to Mr. Lubetkin, enclosing a copy of his letter dated June 24, to Mr. R. Freudenrich, Borough Administrator, recommending that a Resolution be passed by the Mayor and Council at that night's meeting, which would permit Microfilming Corporation to proceed with its connection to the Glen Rock system.

On July 3, 1974, Mr. Horwitz wrote to the PVSC, stating that the engineer for Glen Rock was conducting a survey of Microfilming's premise to determine the specific requirements for tying their plant into the Glen Rock sanitary system. He expected that the survey would be completed during the week of July 7, and that actual construction could start within ten working days after that completion.

Since no work had been done on this project, Mr. Lubetkin called Mr. Harsanyi on August 13, and was told by him that he could do nothing until a resolution had been passed by the Borough Council. Mr. Lubetkin informed him that he thought this had already been done. On August 16, Mr. Lubetkin wrote to Mayor Benken, summarizing what had happened to date, and requested a letter to explain this new delay.

Mayor Benken replied on August 19, stating that the difficulty was over the wording of the resolution which would permit Microfilming Company to connect, and yet exercise the proper controls over their discharge. Because of technical difficulties, the proposed resolution was withdrawn until it could be put in final draft. Mayor Benken, however, stated that he believed they have completely resolved all problems and that the resolution should be the final form for passage in one week.

Inspector Costello reported that the McBride Engineering Company had been hired to connect this discharge into the sanitary sewer, and that construction started September 27, 1974, and was completed Saturday, September 28, 1974, eliminating this violation.

Violation and Elimination - Mikula Contracting Company, 252 Luddington Avenue, Clifton, N.J. and Keith Realty Corporation, 658 Paterson Plank Road, East Rutherford, N.J.
April 18, 1974 (A. Dondero)

The Keith Realty Corporation hired the Mikula Contracting Company to demolish buildings at 94 and 96 River Road in Clifton. The PVSC received a call about 12:30 p.m. from Mr. A. Rogers of Clifton that sewage was being discharged into Third River, a tributary of the Passaic River.

Inspector Dondero investigated about 1 p.m. and found that during the demolition, a 6" lateral sanitary sewer was broken by the Mikula Contracting Company. The inspector was unable to contact anyone of authority at Mikula by phone. Mr. Lubetkin was contacted and sent certified letters and also had copies hand delivered to both Mikula Contracting Co. and Keith Realty on the same afternoon. Mikula Contracting Co. refused to accept the hand delivered letter and also refused the certified letter, however, Keith Realty accepted both letters, the hand delivered being received at 4:15 p.m. on April 18, 1974. The letter directed them to halt the pollution at once.

Inspector Dondero reported that the sewer was repaired at 6 p.m. that same night. Mr. A. T. De Intinis of Keith Realty called Mr. Lubetkin the following morning informing him that the sewer had been repaired and the pollution halted. He confirmed this in a letter dated April 19. PVSC never heard from Mikula Contracting Company.

Violation and Elimination - City of Newark - Rector Street Overflow Sewer
August 18, 1974 - September 26, 1974

On August 18, 1974, a large 57" X 62" brick sewer, at Rector Street just north of Saybrook Place, beneath McCarter Highway in the City of Newark, had collapsed. The collapse occurred during a heavy rainstorm when the regulator was diverting the combined rain flow into the Passaic River. The massive debris and dirt that went into the sewer floated into the regulator chamber and jammed the chamber shut, so that during the repair work this could not be diverted back to the trunk sewer. This sewer was repaired on September 5, 1974; however, before the debris could be cleaned from the regulator chamber, a second sewer also connecting to the chamber collapsed. The second sewer was a 48-inch junction sewer between the Saybrook Place sewer and the Rector Street chamber. This was repaired by September 23, 1974. The chamber was then cleaned and the pollution was halted Thursday, September 26, 1974.

Violation and Elimination - Okenel Corporation, 250 Grant Avenue, Lyndhurst, N. J.
February 7 - 28, 1974 (F. Cupo)

On February 7, 1974, the PVSC personnel noticed a large volume of oil coming into the Yantacaw Pumping Station and notified the Inspection Department.

Inspector F. Cupo went to Lyndhurst and met with Commissioner Janowski and Mr. P. Meznes, Superintendent of Sewers, and made arrangements to have manholes of local sewers checked to determine the origin of the oil.

On Friday, February 8, Mr. P. Forte called Mr. Cupo and stated they they had located the source of the oil as the Okenel Corporation and had directed them to stop at once.

Mr. Cupo met with Mr. Keiller, Vice President of Okenel, on Monday, February 11, and inspected the premises and noticed a large amount of oil in their boiler room and in their plant yard. Mr. Keiller told him that this was the result of a previous accidental spill, but that they had stopped pumping this oil into the sanitary sewer. He stated the spill had been cleaned up by Active Oil Company. The explanation of a spill did not make sense, since the date of the alleged spill was purported to be December 28, 1973, and more oil had accumulated after the clean-up and had started to flow, after they stopped pumping the material to the sanitary sewer, on to Grant Avenue and thence to a catch basin and to the Passaic River via the Lake Avenue Storm Sewer. Mr. Keiller was directed by the Inspector to take immediate action to halt the pollution. Mr. Keiller had his personnel place absorbent material around the area to halt the oil flow.

On February 13, Inspector Cupo again inspected the yard at 9:40 A.M. and he reported that the situation appeared more serious as oil was seeping into the Grant Avenue storm sewer. Inspector Cupo contacted Mr. Keiller and pointed this out to him. Mr. Keiller told the Inspector that they had discovered an oil leak in their return line and repairs were being made. He was warned to correct the situation at once.

On February 14, at 10 A.M., the Inspector inspected the area and noted that a large amount of oil absorbent material had been spread over the area and that the storm sewer catch basin had been partially cleaned. The Inspector was told that the repair of the oil return line had been completed at 7:30 P.M. the previous evening. Mr. Keiller was directed to continue the clean-up. February 19 & 20 inspections revealed that the clean-up was not satisfactory as oil was still detectable in the storm sewer and river, and Mr. Keiller was so informed. On February 21, Coastal Service of Elizabeth started cleaning the area, and on February 28, 1974, the area was clean enough so that the violation was considered eliminated.

Violation and Elimination - Okonite Company, Wire and Cable Division, Passaic Street, Passaic, N. J.
November 8, 1973 - August 9, 1974 (R. Goldstein)

While reviewing the Okonite outlet permit application, Mr. Lubetkin noted that outlet #018 was a boiler blowdown outlet. Since, generally speaking, boiler blowdown is polluting, and since it is easy to correct where a sanitary sewer is available (install a blowdown tank and discharge it to the sewer), Mr. Lubetkin requested that the Inspection Department check this and get a sample. A sample was obtained, found polluting, and the company was directed by the Inspector to halt this pollution. The order was confirmed in a letter to the Okonite Company by Mr. Lubetkin dated December 13, 1973.

Mr. Strandberg, Plant Manager, replied that they had studied the situation and that it was feasible to install a boiler blowdown tank, with a discharge into a sanitary sewer. He further stated that this could only be done when the boilers were shut down, and they intended to do this during their summer shutdown in 1974. Since the pollution was not great, the PVSC believed this to be reasonable. Work to install the blowdown system started on July 22, 1974, and was completed August 9, 1974.

Violations & Eliminations - Pantasote Corporation, 26 Jefferson Street, Passaic, N.J.
April 3, 1974 (R. Goldstein)

On April 3, 1974, at 2 p.m. Inspector Goldstein, while on routine inspection, noted a white cloudy material in Weasel Brook, a tributary of the Passaic River and traced it back to Pantasote Corp. He was told by Mr. N. Sofer, Assistant Plant Engineer, that there was an electrical failure at 1 p.m. on a high level control at the resin storage silo, and as a result some resin had spilled to the ground thence some reached the storm sewer. The spill ended at 1:30 p.m.

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April 9, 1974

Again on April 9, 1974, at 3 p.m. Inspector Goldstein noted a white substance in Weasel Brook and went to Pantasote Corp. to check. He was informed by Mr. Sofer that a plant employee pumped a resin slurry into the wrong holding tank which then overflowed and the liquid entered the yard storm drains. The overflow occurred from 2 p.m. to 2:20 p.m. when it was discovered and halted.

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Pantasote Corporation (continued)

September 6, 1974

PVSC received a call concerning a spill at the Pantasote Company. Inspector F. Cupo investigated and reported that at 5:30 A.M. reactor #1305 went out of control and the safety valve let go at 178 psi, spewing polyvinyl chloride resin onto the ground. The material then was hosed into the storm sewer, thence to Weasel Brook. Inspector Cupo halted them from further discharge into the brook and directed that the material be picked up. The inspectors followed up on Saturday, September 7, and Monday, September 9, during the clean-up operations.

* * * * *

October 25, 1974

PVSC personnel at Wallington Pumping Station reported a grey material on the River at 9:00 A.M. on October 25, 1974. Inspector Goldstein was assigned to check this. Inspector Goldstein, together with Sup't. L. Cuccinello, traced the material back to Weasel Brook, thence to the Pantasote Company.

They found out that at 1:00 A.M. a relief valve on a reactor blew and approximately 1,000 pounds of resin was discharged. The company estimated that approximately 900 pounds fell to the plant roof and grounds, which was recovered, but that about 100 pounds was lost to the atmosphere and the river. The inspector reported there was no evidence of this material in Weasel Brook the next day, and that the grounds had been cleaned by the following Monday.

Violation and Elimination - City of Passaic, 418 River Road, Passaic, N. J.
December 5-19, 1974 (R. Goldstein)

Intermittently sewage seeped through cracks in the road approximately 150 feet north of the River Drive Apartments and entered the catch basin. The Passaic County Road Department dug up the road in this area in order to locate the source of trouble. Dye tests were also made by the City of Passaic of the sewers in 418 River Road,and the color was observed going into the catch basin.

It was discovered that a sewer connection made on March 1, 1974 was to a dead pipe, with the sewage going into the ground, thence working itself to the surface. This was dug up and a 4 inch cast iron pipe was run 20 feet and connected to a manhole, thus eliminating the pollution and road problem.

Violation and Elimination - City of Paterson, Warren Street Storm Sewer
September 11, 1974 (L. Tateo)

On September 11, 1974, Inspector Tateo noticed a discoloration in the Passaic River coming from the Warren Street overflow chamber. He traced this back to Warren Street, off River Street, where a Paterson Sewer had collapsed and was being repaired by a contractor, Alfred Pomante & Sons Construction Co. During this repair, the industrial waste of a nearby dye plant was being allowed to overflow from a manhole to the street catch basin, thence to the river. The contractor was directed to pump the waste around the broken pipe into a sanitary sewer approximately 75 feet away. The contractor did this, thus eliminating the pollution.

The inspector stayed on this job September 11 to September 13, when the repair of this 18-inch line was completed.

Violation and Elimination - S. B. Penick and Company, 540 New York Avenue, Lyndhurst, N. J.
January 17 - May 24, 1974 (F. Cupo)

A sample taken at 9:30 A.M. of the discharge from this company to the Lake Avenue storm sewer (Lyndhurst) was found to have a high B.O.D., C.O.D., and was volatile (5% on the explosimeter). They were contacted immediately by the inspector at 2:35 P.M. the same day, and informed they were polluting and to find the source of pollution and halt it at once.

On January 18, Mr. Michiels, Plant Engineer, informed Inspector Cupo that at 8:30 A.M. on January 17, a faulty vent and vacuum pump caused a solvent to spill into the storm sewer system.

Subsequent samples were much improved. However, the Inspector was making further investigations as to the disposition of their boiler blowdown, which was polluting.

On March 6, 1974, Mr. Lubetkin wrote to Mr. Michiels, informing him that the continuous boiler blowdown was polluting and should not be discharged into the storm sewer. On March 18, Mr. Michiels replied that a study was being made as to the best manner to accomplish this, and within a few weeks PVSC would be advised on the time required to complete the work. On April 5, Mr. Michiels informed Inspector Cupo that the tentative tie-in date was June 1 or better.

During May of 1974, the Reed Plumbing Company of Lyndhurst worked on this project. They installed a continuous boiler blowdown system and connected it to the sanitary sewer. All work was completed on May 24, 1974.

Violation & Elimination - J.L. Prescott Company, 28 Eighth Street, Passaic, N.J.
April 22, 1974 (A. Dondero)

accident

At noon on April 22, 1974 Mr. Fried of the Passaic Board of Health reported an accident at this plant which might cause pollution.

Mr. Dondero was sent to investigate and reported that a tank trailer containing detergent had been parked near the rear of the J.L. Prescott property at the Passaic River embankment. The ground gave way and the tank trailer turned on its side, slipping down the embankment.

During the process of raising and securing the vehicle, a hatch opened and permitted some detergent to spill into the Passaic River. The amount of spilled detergent was considered negligible by the inspector.

Violation and Elimination - Public Service Electric & Gas Co., Essex Generating Station, Newark, N. J.
November 26, 1974 (J. McLaughlin)

quasi-accidental

The PVSC received a call from P. Sutphen, Chief Engineer of Public Service Essex Generating Station, that the watchman had observed some oil going into the Passaic River at 12:30 P.M. on November 26, 1974. This was traced to a leak from a relief valve which allowed oil to enter the trench leading to their cooling water which discharged to the Passaic River. A boat with a float and absorbent pillows was launched to contain the oil while it was removed from the river. Both PVSC and the U. S. Coast Guard were notified by Mr. Sutphen

PVSC inspected the premises on November 27 and the inspector reported the clean-up as satisfactory.

Violation and Elimination - Ridgewood Pollution Control Plant, Prospect Street, Glen Rock, N. J.
November 20-26, 1974

The Village of Ridgewood has a pollution control plant which handles the sewage from this village. This activated sludge plant has a design capacity of 5.0 M.G.D. and treats approximately 3.2 M.G.D.

Since the effluent from this plant discharges into Saddle River, a tributary of the Passaic River, it comes under the jurisdiction of the PVSC, and the PVSC personnel sample this effluent on a routine basis. The licensed operator is Mr. John LaGrosa.

(continued)

Ridgewood Pollution Control Plant (continued)

During 1974 the PVSC checked the discharge 39 times, of which 5 samples taken on January 15, March 20, May 8, November 20, and November 26 were not up to standards, with slightly high C.O.D., B.O.D., and turbidity. In each case the problem seemed to be a minor plant upset and the plant subsequently recovered.

Violation and Elimination-Town of Rochelle Park, N.J.

July 16-27, 1974 (J. Perrapato)

At approximately 11:15 A. M. on July 16, 1974, Superintendent L. Cuccinello, Assistant W. Fleming and Inspector J. Perrapato, while making Saddle River survey,noticed an overflow of sewage from a manhole, located on the N.E. corner of Essex Street and Rochelle Avenue, approximately 50ft. to a catch basin, which thence flowed to Saddle River. A sample was taken and analysis indicated it was not only highly polluting, but it was acid (pH 2.4).

The inspection crew contacted Mr. Charles Lynch, (Supt. of Public Works of Rochelle Park) and were told, by him, that they had tried to free the line, but that it was loaded with pumice and the lines would reseal after each rodding. He stated that the Engineer, Ken Job, had been notified.

Mr. Cuccinello contacted Mr. Job, who informed him that he would try to contact someone to clean the line. He later called Mr. Cuccinello and informed him that he could not get anyone before Thursday morning, July 18.

Mr. Harry Gardner of Multitone Plastics Engraving Co., Inc., (a discharger into this line) was contacted by Mr. Cuccinello and he agreed to cooperate by shutting down part of his process, thus reducing the flow. The Inspector reported that by 2 P. M. the overflow had stopped (due to the reduced flow).

On July 18, 1974, Mr. Lubetkin wrote to the Town of Rochelle Park, informing them of the situation and,in particular, pointing out that the sewage was highly acid and that the PVSC felt it was important to notify the Town as this waste could be highly destructive to the Municipal sewer and and was also in violation of Federal regulations.

Mr. Lubetkin also informed them that the blockage should be cleared at once to halt the pollution problem.

On July 18, the Robinson Pipe Cleaning Company, hired by Rochelle Park, tried to clean the line but were unsuccessful with the equipment they had on hand.

On Saturday, July 27, Robinson Pipe Cleaning personnel returned with a vacuum cleaning truck and cleaned the line. The work was completed at 3:30 P. M. on the same day and the violation was eliminated. However,Rochelle Park (and the Bergen County Sewer Authority) still had the problem of acid waste which was confirmed with another sample, dated July 26, 1974 .

Violation & Elimination - Royce Chemical Company, Carlton Avenue, East Rutherford, N.J.
April 22 - 30, 1974 (F. Cupo)

On April 22, 1974, Inspector Cupo, while making an inspection of the Carlton Hill Storm Sewer, noted foam flowing from this to the Passaic River. He traced it back to the Royce Chemical Company and contacted Mr. D'Angelo, Boiler Room Foreman, at about 11:15 a.m. Mr. D'Angelo was shown the foam in the ditch on their property and, with Mr. D'Angelo as a witness, samples were taken from the ditch and from the pond (on Royce property) leading to the ditch. These were analyzed and both were found to be polluting.

An inspection the following day and on April 24 indicated that the same foam was present. Inspector Cupo met with Mr. Royce, III, showing him the pollution and directing him to halt it at once. Mr. Royce did not have an answer for the cause of the pollution, but said that he would investigate. Pollution was still evident on April 26 but had disappeared by April 30, 1974. No reason for the pollution or its disappearance was found.

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May 30 - June 5, 1974

On May 30, 1974, Inspector Cupo made a routine inspection of this company and found a brownish material flowing from a 12" drain pipe into the ditch that empties into the Carlton Hill Storm Sewer. He immediately contacted the plant manager, Mr. Maziorski, and was informed that this condition may be caused by workmen cleaning tanks with caustic soda. The inspector informed him and Mr. Jay Royce III that this type of thing must be halted at once.

Analysis of the material flowing into the storm sewer (thence the Passaic River) was as follows: pH = 11.7; C.O.D. = 3832; susp. solids = 10,188; susp. volatile solids = 2,488; turbidity (J.T.U.) = 7,280; really bad stuff.

Follow-up inspections of June 3, 4, and 5 and a sample taken June 5 indicated that the pollution had halted.

On June 24, 1974 Mr. Lubetkin wrote to this company, pointing out the intermittent pollutions from this company in the past, and requested information on how they would monitor their discharge in the future to prevent recurrence of this.

Mr. Lubetkin also informed them that they must apply for a National Pollutant Discharge Elimination System permit from the U.S.E.P.A.

(continued)

Royce Chemical Company (continued)

Mr. A. J. Royce III, Vice President, replied thanking the PVSC for calling their attention to these matters and stating that, since the storm sewer drain in question is of no use to them, they are making arrangements to block it off to prevent future accidents. He also stated that he had directed his Engineering Department to make immediate application, if necessary, for a N.P.D.E.S. permit.

Violation and Elimination - Sandoz Color and Chemical Company, Fair Lawn Avenue and Third Street, Fair Lawn, N. J.
October 3-4, 1974 (T. Costello)

Inspector Costello observed tiny islands of suds floating in the Passaic River near the Sixth Avenue Bridge in Fair Lawn, at 9:30 A.M. on October 4, 1974. He traced it back to Sandoz and spoke to Mr. M. Friedman, Plant Engineer.

He was informed by Mr. Friedman that at about 4:30 P.M. on October 3, a fiber drum, which was stacked beneath another drum, apparently weakened by recent rains, collapsed and spilled its contents (50 gallons) over the ground. The material was T.F.L. 40, a water solution (20% solids) of an anionic surfactant manufactured by Sandoz.

The maintenance people spread sand over the area, attempting to contain this detergent-like material, and shoveled the residue into drums to be carted away. During the clean-up operation, they estimated a small amount of the T.F.L. 40 managed to seep into a trench, and at 7:00 A.M., October 4, was washed out outlet #4 by water from their water tower into the Passaic River.

All the fiber drums have since been removed from the area and stored in the warehouse where they belonged.

Violation and Elimination - Servometer Corporation, 82 Industrial East, Clifton, N. J.
May 16 - June 12, 1974 (F. Wendt)

The PVSC received an anonymous letter which informed them that the above company dumped waste cutting oils and assorted chemicals into the storm sewer of the City of Clifton. Meanwhile, Inspector Wendt had checked this company on May 16 and found steel barrels on the property which were leaking and dripping oil which then went into a yard catch basin, thence to MacDonald's Brook. The inspector contacted the Plant Manager, Mr. Fejes, and showed him the violation. Mr. Fejes immediately had four employees dig a ditch about 25 feet to a 55 gallon steel drum located in the ground into which the oil drippings were received. The inspector reported that this company would be relocating to Cedar Grove within the next two months.

Servometer Corporation (continued)

When Mr. Lubetkin received this report, he wrote on June 11 to the company that the solution was unsatisfactory as the oil would soak into the ground causing problems for many years. They were also informed that oil pollution was a Federal offense and could subject their company to a fine for each day the pollution continued. They were warned that even though they moved from the area, they would be responsible for the oil pollution, and they were directed to do everything possible to prevent any further oil from discharging into the ground and to remove the oil already deposited in the ground.

On June 17, Mr. M. Holowachuk, President, replied that roughly one week after the above situation was discovered, they had made arrangements with their scrap collector to provide them with a large bin which is an enclosed unit and eliminates all leakage of oil. He also stated that if there are any other requirements PVSC feels are necessary, if we would notify them, they will comply immediately.

Violation and Elimination - Sherwin-Williams Company, Lister Avenue, Newark, N. J. 07105
August 22, 1974 (J. McLaughlin)

Mr. J. Davidson, Plant Manager of Sherwin-Williams, called Inspector McLaughlin at 9:50 A.M. and reported an overflow of latex paint into the Passaic River.

The time was not definitely determined, but sometime between 12 midnight and 5:30 A.M., some unknown person connected a water line to the bottom of a tank car which was partially filled with latex. The water diluted this material, and overflowed the watery latex into the yard and thence to a sump pump which automatically pumped the liquid into the storm drain to the Passaic River. The sump pump normally pumps storm water during rains.

The overflow was first noticed at 5:30 A.M. and the sump pump flow was diverted to 55 gallon drums. A 5 gallon pail was also hung beneath the 10-inch outlet to the river to catch any further polluting drippings.

by the time Inspector McLaughlin arrived, the clean-up operation was complete and there was no further pollution.

Violation and Elimination - A. E. Staley Mfg. Co., 320 Schuyler Avenue, Kearny, N.J.
January 24 - March 21, 1974 (J. Colello)

In reviewing applications to the USEPA for discharge permits, it was noted that this company discharged a boiler blowdown into the Third Avenue Kearny Storm Sewer, via a 10-inch line. The Third Avenue Kearny Storm Sewer discharges, in turn, to Frank's Creek, a tributary of the Passaic River.

Inspector Colello was directed to get a sample, which he did on January 24, and analysis of this sample showed it to be polluting.

Inspector Colello informed Mr. P. Labrecque, Maintenance Superintendent, that the discharge was polluting, and the pollution should be halted.

Mr. D. Golante, Manager of Manufacturing, wrote to the PVSC on February 26, 1974, stating that the installation of a blowdown tank to halt this pollution would be completed before March 31, 1974.

Inspector J. Colello reported the work was completed March 21, 1974, with the installation of a 130 gallon blowdown tank and 30 feet of two inch pipe from the tank to the sanitary sewer.

Mr. Golante confirmed this in a letter dated March 27, 1974.

Violation and Elimination - Suffern Plating Corp., 210 Garibaldi Avenue, Lodi, N. J.
August 13 - September 20, 1974

On August 13, 1974, while working on the Millbank Brook survey, Inspector Perrapato noticed a discharge from a small pipe at the curb of this company. The discharge went into a storm drain, thence to Millbank Brook. Since the plant was apparently closed the inspector took a sample which was analyzed and found polluting.

The inspector visited the plant the following week and spoke to Mr. H. Landau, President of Suffern. Mr. Landau stated he had no knowledge of the drain, nor souce of pollution, (which was intermittent and was dry at the time of visit). Mr. Landau promised to have the drain sealed after rechecking to see that he does not plug up a necessary outlet.

The drain was sealed as of September 20, 1974, after dye testing in the plant did not show an outlet.

Violation and Elimination - Tenneco Chemicals, Inc., Intermediates Division, 290 River Drive, Garfield, N. J.
November 29, 1973 - June 6, 1974 (J. Perrapato)

The Tenneco Chemical Company had a 2 inch boiler blowdown line to the Passaic River. Since, generally speaking, boiler blowdowns are polluting, the inspector was asked to check and get a sample.

He confirmed this discharge, and he informed Mr. Dege, Plant Engineer, that it was polluting and should not be discharged to the river. Mr. Lubetkin wrote to the company on December 13, 1973, directing them to halt this pollution.

On December 26, 1973, Mr. M. Dege, Plant Manager, replied that they were taking immediate action to purchase and install the necessary equipment to divert the discharge of this material into the sanitary sewer. They expected delivery of the material about May 1, 1974, and expected to have the unit installed by June 1, 1974.

The inspector reported that the work was completed and the violation eliminated on June 6, 1974.

Violation and Elimination - Thoro Cleaning Products Co., 692 Passaic Avenue, Nutley, N. J.
May 7, 1974 (A. Dondero)

Inspector Dondero, while on a routine check on Third River, noted an employee cleaning a piece of machine equipment with a steam cleaner, with the liquid detergent running off into a nearby storm drain and into a catch basin, thence to Third River. The inspector contacted the owner, Mr. Frank Lindsey, and informed him that this pollution was a violation of law and should cease immediately. Mr. Lindsey had the man stop at that time.

Mr. Lubetkin wrote to this company on May 22, 1974, serving notice that the discharge was illegal and they were directed to cease this type of operation at once. Mr. Lubetkin requested a reply which would inform the PVSC what would be done to see that this type of pollution is not repeated. No reply was ever received.

Violation & Elimination - Troy Towers, Bld. A. Congress St. Bloomfield, N.J.
January 30, 1974 (R. Kordja)

Mr. Swanson of West Orange, called PVSC, reporting a brownish colored oil coming into Second River in Watsessing Park in the vicinity of Locust Avenue.

Assistant Chief William Fleming, Inspector Goldstein and Inspector Kordja traced this oil, first to a 24" storm drain into Second River at Watsessing Park and then back to a boiler room in Building A of Troy Towers. The building superintendent was in the process of repairing a one inch oil line, and replacing a leaky valve when the inspectors arrived.

They reported that at approximately 6 A.M. the line to the main boiler broke and #2 oil ran into a sump and was thence pumped into the storm line which ran into Second River, about 200 yards away. The floor was covered with sand and the repair was completed two hours later. They estimated 25 to 50 gallons of oil reached the river.

Violation & Elimination - Vivatone, Inc., 110 East 27th Street, Paterson, N. J.
June 12, 1974 (L. Tateo)

Inspector L. Tateo and Assistant Chief Inspector W. Fleming noted a blue coloring in the Passaic River approximately 200 yards downstream of the Fair Lawn Avenue Bridge. They traced it back to the Paterson Fourth Avenue storm sewer outlet (20 ft. upstream of the bridge). They further noted the material entering the storm catch basin at Route #20 and Fourth Avenue and traced it back to an overflowing pit at Vivatone, Inc. The 3' x 3' x 4' pit was in front of the plant on East 27th Street and the sewage was running in the gutters down 27th Street to Fourth Avenue, thence down Fourth Avenue to the catch basin.

Mr. C. Germonetti, Plant Manager, was contacted and he called a sewer cleaning company and they cleared a blockage in the 6 inch sanitary sewer which then allowed the sewage to enter into the Paterson system without overflowing. The work was completed and the violation eliminated at 3:30 P.M. the same day.

Violation and Elimination - Warren Brothers Company, Planter Avenue, Prospect Park, N. J.
May 16-20, 1974 (T. Costello)

While inspecting the Passaic River in the Prospect Park area, Inspector T. Costello, along with Ass't Chief River Inspector Fleming, noticed oily films at the base of the 36-inch Prospect Park storm sewer at the foot of No. 6th Street. This was traced back to the Warren Brothers and Sowerbutt Quarry.

Mr. P. Schuster, President, explained that during the night some vandals had filled the fuel oil tank on a paving machine with stones. That morning personnel emptied the tank (about 30 gallons of diesel oil) into a sand pile (thinking the sand would absorb the oil). Subsequently, the water tank truck, which is used to spray the yard for dust control, came too close to the oil saturated sand and washed the oil out to the storm drain. It was not until May 20th that the drain was clear of any signs of oil.

Violation and Elimination - Wiggens Plastic Molding Co.
180 Kingsland Road, Nutley, N.J.
March 26, 1974 (A. Dondero)

On March 26, 1974 at 9:30 A.M., Inspector Dondero noticed an oil slick traveling downstream in Third River.

He traced it back to a 3" metal outlet from the Wiggens Co. to Third River. Mr. Dondero contacted Mr. W. Kroeschel, Plant Manager, and was told the outlet was a discharge of cooling water from two New Britain Molding Machines. Mr. Dondero pointed out the oil and directed him to shut off the machines until the source of pollution could be found and halted.

Mr. Dondero returned at 2:45 P.M. and could find no trace of oil in Third River. He contacted Mr. Kroeschel, who told him that the after-cooler above one of the machines had been leaking oil and the machine would be kept out of operation until the necessary parts on order were received and the after-cooler repaired.

PART III

The following are reports on polluting discharges still in existence as of the end of 1974, into the streams under the jurisdiction of the Passaic Valley Sewerage Commissioners, together with information on what is being done to abate such pollution, and the name of the River Inspector assigned to the pollution.

Violation - Active Oil Service and the Town of Belleville, Main Avenue, Belleville, N. J.

April 1 - December 31, 1974 (Intermittent) (A. Dondero)

On or about March of 1973, the Tenneco Company closed its plant located at 374 Main Avenue, Belleville. It then sold the premises to Active Oil Services, which demolished buildings, etc., in order to reconstruct a new oil reclaiming plant at that site. While Tenneco occupied the property, since they handled a great deal of dye, and since they had previously polluted at this location, they collected the storm water (with its polluting dyes) and had it discharged into the Belleville sewer and thence to the PVSC trunk sewer. However, after Tenneco moved, the sewer into Belleville was capped and the PVSC inspectors noted that during and after each rain storm, the runoff, highly colored, polluted the river, presumably from ground residue left by the previous owner.

The new owners Active Oil Service, had told PVSC verbally, that they had, while building their new plant, intended to surface the area and discharge the storm runoff, along with any oil droppings, into a treatment plant, to remove the oil, thence to the PVSC trunk sewer, through the Belleville sewer. This was discussed at a conference held February 7, 1974, and confirmed by a letter from PVSC to them dated February 8, 1974.

In March, however, PVSC inspectors had reported that work in this area has ceased and that the pollution was quite evident.

On April 3, 1974, Mr. Lubetkin wrote to Active Oil Service, informing them of the pollution and requesting information as to when the area would be surfaced and the drainage handled by the treatment plant.

Violation - Active Oil Service & Town of Belleville (con't)

On May 16, 1974, the Engineer of the Town of Belleville wrote to Active Oil Company informing them that they had received no response to a letter that Belleville had sent February 6, 1974, and reminding them that no construction can proceed until plans and specifications are provided pertaining to oil separator equipment. We do not have knowledge of any reply.

Mr. Lubetkin received a telephone call from Mr. George Rohde, of Active Oil Service, wherein he stated that he is not responsible for the pollution and Belleville could easily halt the pollution by uncapping the line to the Belleville sanitary sewer. He stated that the sewer was capped to save Belleville money by not having to pay for treatment of this water, and City employees had refused suggestions that the sanitary sewer be reopened. He also stated that he could not tell when his work would continue, as he is presently being held up by the Town of Belleville's refusal to issue building permits that were passed by the N. J. Department of Labor, as well as by their own building inspector. Mr. Rohde confirmed the telephone call with a letter dated July 9, 1974. Mr. Simon Liberman, Building Inspector of the Town of Belleville, advised the PVSC that no site plan or building plans for a tank pad had ever been submitted to his department as approved by the New Jersey Department of Labor and Industry.

Since the pollution (which consists of flourescein dye residue in the ground) only occurs during and after rains, and since the material does no harm to the waterway (except asthetically with a green color), PVSC is not taking action against the Town of Belleville. It is expected that this matter will be cleared up as soon as either Active Oil or another owner will rebuild on this property.

Violation - City of Clifton - Athenia Storm Sewer
September 1970 to December 31, 1974 (F. Wendt and W. Fleming)

The discharge from this sewer which enters into Weasel Brook, near Fornelius Avenue and Lewis Place, contained a significant amount of coliform, although generally not polluting in other parameters. The City of Clifton had supplied the Commissioners with drawings, showing the location of manholes in this sewer and connecting sewers. On Wednesday, July 28, 1971, samples were taken at ten locations along the path of this sewer and analyzed in an attempt to learn the source of the pollution. Unfortunately, unknown to the Commissioners' personnel, there were two parallel storm sewers in this area. These sewers are interconnected at certain points, but these were not shown on the drawings. Mr. Lubetkin visited Clifton's engineering department on August 25, 1971, to discuss these sewer locations. Subsequently new drawings were supplied, showing both sewers.

Samples were taken on September 23, but no definite pattern could be ascertained to locate the source of pollution. During October, the storms prevented proper investigation. During November and December, further samples were taken to discover a flow pattern.

On January 3, 1972, while investigating a complaint of a sewer back-up, the Clifton Sewer Department found a break in an 8-inch sanitary line at the corner of Orono and Sargeant Streets, and some sanitary sewage was entering the Athenia Storm Sewer. The broken line was replaced, work being completed on January 7, 1972.

Since subsequent samples indicated pollution (coliform), although lower than before, Mr. Lubetkin wrote to the City of Clifton on February 14, 1972, suggesting that the best way to trace the source of pollution would be the hiring of a laboratory to undertake the work.

On May 19 and again May 22, 1972, letters were sent to the Passaic Valley Sewerage Commissioners concerning the Clifton pollution. Mr. Holster, City Manager, wrote that the City Health Officer, Stuart Palfreyman, was being assigned with men of the Department of Public Works to systematically check the Athenia Storm Drain System in an effort to locate the source of trouble. He felt that there may be some old cesspools which may leak at time of high water table into the storm system.

Mr. Lubetkin spoke to Mr. Holster on the telephone during February 1973, reminding him that progress on the elimination of this pollution was slow. Mr. Holster promised to attend to this at once.

Violation - City of Clifton (continued)

On March 6, 1973, Mr. Lubetkin requested an up-to-date report on the situation from the City of Clifton. On March 14, Mr. J. Jamieson, Engineer from Clifton, replied, stating they had examined the sewer visually and had not found any significant infiltration. He said they were considering a program of chlorine disinfection to aid them in their search. He also said they would continue to strive to correct this problem.

On May 31, Mr. Jamieson called Mr. Lubetkin stating that they had not been successful in locating the source of the pollution and their people think the source may be animal. Mr. Lubetkin told him that on February 28, the PVSC analyzed for both fecal coliform and fecal steptococcus, and the ratio (3.9/1) indicated a high probability of the waste being human waste. Mr. Lubetkin sent Mr. Jamieson a copy of this report, together with a table from EPA literature on Water Microbiology. Mr. Lubetkin stated in his letter that the pollution had been on the PVSC list since September, 1970, and the PVSC felt that the City of Clifton should make every attempt to find and halt the source of the pollution. Mr. Lubetkin suggested that if City personnel cannot do this work, then an outside consultant should be hired to perform the work.

On June 12, 1973, Mr. Jamieson sent a letter to Mr. Holster (copy to Mr. Lubetkin) stating that their Department of Public Works had discovered (and repaired) an 8" sanitary sewer at the intersection of Samuel Avenue and Speer Avenue that had four defective leaking joints. Mr. Jamieson stated that he felt this was a major source of pollution into the Athenia Storm Sewer.

On June 27, Mr. Lubetkin wrote to Mr. Jamieson informing him that samples taken after the repair still indicated a high fecal coliform count (although less than before); therefore, it appeared that there are other sources of pollution still to be found and corrected.

On August 13, 1973, Mr. Lazzio and Mr. Lubetkin met with representatives of Clifton headed by Mr. Lorenz to discuss this matter. When Mr. Lubetkin discovered they were working from old surveys (September 1971; June 1972; and August 1972), he suggested that an up-to-date survey be taken, and a scientific approach be used to locate the source of pollution. Mr. Lubetkin said that the PVSC laboratory would be glad to help with analytical work, but that it was the responsibility of the City of Clifton to do the field work.

Violation - City of Clifton (con't)

On September 10, 1973 Mr. Lubetkin wrote to Clifton outlining the discussions of the August 13 conference, and reiterated that if Clifton was unable to solve the problem with their own forces, it was incumbent upon them to hire outside consultants to aid them to abate this pollution.

On October 2, Mr. Lubetkin wrote to Clifton requesting a report on progress, On October 15, Mr. Holster replied, enclosing a report in which they state they are identifying and tracing all lines involved through the streets, etc. in a "scientific approach" to the problem. As soon as all lines are identified and plotted on a schematic with flows, they will go into a concentrated sampling program to pinpoint the source of pollution.

Mr. Stuart Palfreyman (Health Officer of Clifton) submitted a report giving the status as of the year's end. He stated that they had discovered a number of situations which required further investigation, such as:

(a) A suspected fissure of a sanitary line lying adjacent to storm lateral on Van Houten Avenue.
(b) Another suspected fissure or blockage on Spencer Avenue.
(c) Numerous blockages were found along the line that were clogging flows.
(d) At least two possibilities of backflows due to settling lines and/or obstructions were found.

Plans for the future would progress in four phases:

Phase I: A systematic survey of all City owned lines and the removal of accumulated debris and silt from clogged or obstructed lines. (Estimated to be accomplished by February 28, 1974).

Phase II: Chlorination of entire line to reduce the flora of the line (immediately after Phase I).

Phase III: Biological sampling of entire line, one step at a time to isolate sections free of fecal coliform, and to locate source or sources.

Phase IV: Make whatever repairs or changes are necessary to halt pollution.

Violation - City of Clifton (continued)

On June 24, 1974, Mr. Lubetkin wrote to Mr. Holster requesting an up-to-date report on progress. On July 3, 1974, Mr. Jamieson replied that due to the extreme amount of rainfall the past spring and early winter, sewer cleaning had been delayed. They recently had begun to clean the obstructions from the 60" RCP storm line on Elm Street. He stated that there was approximately 1 1/2 feet of silted material, boulders, etc. to be removed for about 200 feet. He also stated they would strive to complete Phase I of the work, but he said he could not estimate when this would be done. He reiterated that they would try to trace the pollution to its source and make the necessary corrections to eliminate it. He requested copies of lab analyses done by PVSC. These were sent to him immediately.

During August, September, and most of October, the City crew was still working on cleaning the line on Elm Street. However, we noted work stopped as of October 25, 1974, and PVSC has been informed this was due to manpower required for the leaf pick-up program and for several jobs of an emergency nature. As

As of the end of 1974, PVSC was informed by Clifton officials that they are assigning crews to continue cleaning the lines and the work would be pursued until completion. Mr. Holster, City Manager, also reported to the PVSC that both their Health Department and Department of Public Works have been ordered to make this a high priority job and to stay on it to completion.

Violation - City of East Orange, Dog Pound, 133 Midland Avenue, East Orange, N. J.
November 1 - December 31, 1974 (R. Kordja & L. Cuccinello)

On November 1, 1974, Mr. Eugene A. Field, Superintendent of the Essex County Park Commission, while investigating reports of oil pollution into Second River, noticed that a pipe from the East Orange Municipal Dog Pound drained into Second River. With the assistance of Mr. W. Gibbons, Sanitary Inspector for East Orange, a dye test was made (at 9:05 A.M.) and within a very short time the dye was visible at the outfall end of the pipe. Thus, it appeared that the animal feces and washing compounds entered into Second River through this pipe. Mr. Field wrote to the PVSC and reported the facts.

Mr. Lubetkin received his letter on November 12, 1974, and immediately requested the River Inspection Department to investigate and report. On this same date, Mr. Lubetkin sent a letter to Mr. M. D'Altilio, the engineer of East Orange, enclosing a copy of Mr. Field's letter and requesting a report from Mr. D'Altilio as to what East Orange would do to halt the pollution. Meanwhile, Mr. Cuccinello confirmed Mr. Field's report that pollution entered Second River from the dog pound. The pipe in question was an overflow pipe from a "cesspool" which received the washings from the pound.

On November 19, Mr. D'Altilio, P.E., replied to Mr. Lubetkin, informing that East Orange has allocated funds and was preparing plans for the relocation of the dog pound to a higher elevation which will permit the kennel washings to enter the sanitary sewer.

On November 25, 1974, Mr. D. Byrnes, Health Officer, wrote to PVSC, admitting that the drain was illegal and repeating Mr. D'Altilio's statement that they would relocate the dog pound. He stated that the plans and specifications would be ready for bidding during December 1974. He also stated that until the pound was relocated, every effort would be made to keep the drainage tap as clean as possible, thereby reducing the overflow into Second River.

Mr. Byrnes reported to the inspector that, as of the end of 1974, plans and specifications were nearly completed and that they would go out to bid as soon as possible to relocate the pound.

Violation - Getty Oil Company, 86 Doremus Avenue, Newark, N.J.
February 1 - December 31, 1974 (J. McLaughlin)

On February 1, 1974, Inspector McLaughlin took a sample of the discharge from the oil separator which thence entered the Passaic River, and analysis of this sample indicated that it was polluting. Mr. McLaughlin informed them of the results, and directed that they stop the pollution.

A second sample was taken February 14, 1974, and it was also polluting.

On February 27, Mr. Lubetkin wrote to Getty, informing them that apparently their oil separator was not large enough and that they should take corrective action at once, in order to halt this pollution.

On March 14, Mr. J. C. Gassert, Engineer Manager of Getty, replied that they have completed drawings and have applied for permits for the proposed water separation system, and as soon as they receive the necessary permits they would request bids for the work and would proceed with the project. He also stated that they could not establish a time table until they actually received the permits.

Mr. Lubetkin replied that PVSC had no information that Getty had applied for a permit; however, even if they had, since they were polluting, it was necessary to correct the pollution and not wait until they received a permit.

On April 11, Mr. Gassert wrote informing PVSC that they had hired Morris and West, Consulting Engineers, to design the necessary oil separator equipment, and in the interim were maintaining the existing system in a clean and workable condition.

On April 19, Mr. R.P. West, P.E., stated that they had completed the design of a system based on the premise that the pollutant was oil; however, they had subsequently learned there may be other pollutants, such as detergents, present in the discharge, which would give a problem.

On June 10, Mr. Lubetkin wrote to Getty Oil Co. requesting an up-to-date report. On June 26, Mr. Richard P. West wrote, enclosing some plans and stated that the Getty Oil Co. must meet new air pollution requirements by May 1, 1975, and the vapor recovery and disposal system required will also require substantial alterations of their tank truck loading rack and drainage system. Thus, considerable savings can be made if all the construction work was undertaken together. He submitted a schedule showing the oil/water separator completed by December 1, 1974.

Violation - Getty Oil Co. (continued)

On July 9, 1974, Mr. Lubetkin wrote to Morris and West that he had questions on the proposed installation, and requested a conference to discuss this matter.

On July 24, a conference was held, attended by Mr. West, Mr. J. C. Gassert, Engineering Manager of Getty, Mr. J. C. King, Assistant to Mr. Gassert, and Messrs. Lubetkin and Goldberg of PVSC.

Getty representatives agreed to modify the proposed oil collection and they reiterated that they expected the oil removal installation completed by December 1, 1974; however, if they were delayed, through no fault of their own, they stated that they would immediately notify PVSC, indicating the cause of the delay, together with any new schedule.

On December 18, 1974 Mr. Lubetkin wrote to Mr. Gassert, pointing out that the oil separator was not completed on December 1 as expected by Getty, and that PVSC desires a report on this matter, including a realistic date when the separator would be installed.

Mr. Gassert replied on December 24, stating that the contractor had been authorized to place orders for necessary sheeting and piles to be used in this project and would start shortly after January 1, 1975, weather permitting. He further stated that the oil separator system should be in operation by early spring and that in the interim they were taking every possible precaution to prevent any spillage of petroleum products from entering the Passaic River.

Violation - Hawthorne Realty Co., 179 Goffle Road, Hawthorne, N. J. (Office: c/o Dunbar Sales, 39 Avenue C, Bayonne, N. J.

August 13, 1974 - December 31, 1974 (T. Costello)

On August 13, 1974, Inspector M. Tomaro noted traces of oil in the Passaic River which was visible at the Wagaraw Road Bridge. He tried to trace it upstream to the source but, unfortunately, the brook was piped underneath buildings of an industrial complex of the Hawthorne Realty Company making this difficult. The matter was then turned over to Inspector Costello who went upstream of this complex and found the water clear. Although the culvert, containing this stream was large enough to walk through (approx. 4x8ft.) there was an underground pipe which crossed the culvert and which acted as a dam. This dam collected and held back debris which had floated down from upstream, making it impossible to walk through and check for the source of the oil.

After this unsuccessful inspection was reported, Mr. Lubetkin,on September 13, wrote to the Hawthorne Realty Company, informing them that oil was emanating from somewhere within the industrial complex owned by them and informed them that it was their responsibility to have the oily discharge halted.

On September 16, at 10:40 A. M., Mr. Steve Rubenstein called Mr. Lubetkin and explained that the oil came from drums that floated down from upstream and lodged under their buildings. He informed Mr. Lubetkin that they clean under their buildings about twice a year, at which time the oil stops, until the first rain storm, when again barrels, containing oil, lodge in the undergroung culvert.

Mr. Lubetkin requested that he immediately write a letter explaining his position, and, in addition, explained to Mr. Rubenstein that since the industrial complex was built over a natural stream, it was his responsibility to keep the culvert and stream clean. Mr. Lubetkin also told him that if he would clean it once again, the PVSC inspectors would again monitor the stream to see if the oil did, in fact,clear. Mr. Rubenstein was told the PVSC personnel would like to see the materials removed during clean-up to see if such oil drums existed and could be traced to the original source so that this pollution could be halted.

Mr. Lubetkin also directed the inspectors to check the banks upstream to see if there was any obvious place where such floating drums could originate.

Since no letter was received from Hawthorne Realty Company, Mr. Lubetkin on September 24, 1974, wrote to Mr. Rubenstein confirming the telephone conversation of September 16 and in addition directed him to take whatever steps were necessary to halt the pollution of Goffle Brook, and to reply informing the PVSC what would be done, together with a time table so the PVSC personnel could be there to inspect such work.

Violation - Hawthorne Realty Co. (con't)

Mr. Rubenstein replied in a letter dated September 25 (but received by PVSC September 30) that since September 16th, he had a couple of his men push the debris, that was under the building, downstream. He stated that he also contacted Mr. Wilson from the Mosquito Commission and that he would have the debris removed from the entrance where the water enters the building. Mr. Rubenstein also stated that he rechecked for oil in the stream and at the last check there was no sign of oil.

Mr. Lubetkin checked with the inspection department and was informed that the oily condition still existed and the debris was still too great to make an underground inspection. They were directed, by Mr. Lubetkin, to contact Mr. Rubenstein and meet him in the field and point out to him the oily condition, and again inform him that they desired to be present when the area was cleared.

Inspector Costello reported that the Passaic County Mosquito Commission started the cleaning operation of Goffle Brook on October 25, 1974. The work continued through October 31, with broken concrete, tree branches, soda and beer cans, pieces of metal, old tires, wooden crates, a large tree trunk, assorted debris, and a large sand-bar being removed.

On November 8, an old iron fence was placed in position on the upstream side of the building to prevent further debris from going under the building. Further additions were made to the fence on November 20. No further work to clear the remaining debris was attempted from November 8. On November 27, after a report of a particularly heavy discharge on November 25, Sup't. Cuccinello met with Mr. Rubenstein, and Mr. Cuccinello, together with Mr. Lennon, Maintenance Man for Hawthorne Relaty, walked part way under the building (approximately 15 feet), but could not find source of oil.

Mr. Rubenstein told Mr. Cuccinello that if PVSC could find the source of the oil, he would correct any defects.

Since the oil continued, and since a closer inspection was not possible until the brook was further cleaned, Mr. Lubetkin on December 4, 1974, again wrote to Hawthorne Realty informing them that it was their responsibility to clean the stream, locate the source of oil, and correct the violation.

Since nothing further was heard from Mr. Rubenstein, the matter was turned over to the PVSC legal department, and Mr. Segreto wrote to him on December 12, informing him that if corrective action was not taken by December 20, 1974, PVSC would institute suit in Superior Court to obtain an injunction to prevent continued use and occupancy of the structure until such time as the debris has been appropriately removed and the oil pollution terminated.

Violation - Hawthorne Realty Co. (con't)

On December 20, Mr. Rubenstein wrote to PVSC stating that the oil in the brook is coming from the sewer line which crosses the brook (under the building) and he would be happy to show PVSC where the line is located and that no debris is in the way of the sewer line.

Arrangements were made for an inspection with Mr. Rubenstein on December 27, 1974 and, with the PVSC personnel, they were under the building for approximately 1 1/2 hours checking the sewer line, but could find no break in the line nor oil coming from it. Due to the darkness and small amount of oil involved that day, they were not able to detect the source of the oil.

At Mr. Lubetkin's suggestion, in January of 1975 baffles will be put across the stream in the clear part and slowly moved downstream until oil accumulates behind it, so as to find the point where oil is first detected and thus locate the source.

Violation - Henoch Oil Company, 515 Broad Street, Clifton, N. J.
October 25 - December 31, 1974 (R. Goldstein & W. Fleming)

According to a report from them to PVSC, on Friday, October 25, the Henoch Oil Company found that a line running from one of their pumps to a meter had lost its prime. They attributed it to a faulty check valve, which they replaced on Saturday, October 26. On Monday, October 28, they found they still had a problem with the line and had it pressure checked. It failed to hold pressure, therefore, they discontinued the use of the line. On the 29th they uncovered the line and repaired it, finding a crack in the pipe by a threaded coupling. Mr. Miller of Henoch maintained that the line was from an underground tank to their loading rack and was only in use for a few minutes a day and he estimates the amount of product lost was nine gallons.

The Clifton fire department reported what was thought to be oil in Weasel Brook over the Veteran's Day Holiday. A sample of this material was taken from a ditch leading to Weasel Brook, adjacent to the Garden State Parkway, on October 29, by Inspector F. Wendt. The laboratory reported it was highly volatile and they suspected gasoline rather than oil. The discharge was traced back to the Garden State Parkway garage and Henoch Oil Company area.

Mr. Purdy of the Henoch Company immediately hired the Metropolitan Petroleum Company of Jersey City to contain the material and to clean up the residue. Henoch officials maintain that this was done in a spirit of cooperation even though they did not believe they were responsible.

Violation - Henoch Oil Company (cont.)

The gasoline was coming into the yard catch basins in the Garden State Parkway garage yard, and under the direction of Mr. DeRosa, Sr. Engineer, the sewer pipe entering into the catch basin was excavated at several locations and the pipe broken to pump the material into barrels to be taken away by the Henoch Company. A sample taken of this discharge and a sample taken from the Henoch tanks indicated that they were both gasoline with similar characteristics, and therefore it is reasonable to assume they are the same and that somehow the Henoch gasoline was entering the ground and leaching into the Garden State property.

By November 12, the Parkway personnel backfilled the ditch as there did not appear that any more oil was leaching in at this point.

On November 13, while Mr. Cuccinello, PVSC Supervisor, was inspecting the site for a progress report, he noted another flow of oily material going into Weasel Brook. He traced this back to a 24 inch storm sewer under the Parkway coming from the Henoch property. He found the discharge was coming from a 6-inch line from the holding pit which collects drain water from the Henoch property. Someone had opened the drain valve. Mr. Purdy of Henoch said that the discharge was unauthorized. He was told not only should the valve be closed, but this line should be sealed. This was done immediately.

Toward the end of the month, oily looking material again appeared to come from this pipe (to the river) and a small dam was erected and the oil pumped out as it accumulated. As of the end of December, the volume appeared to be getting smaller, so possibly it is only residual material left from the earlier leak. This will be watched in 1975.

Violation - Town of Kearny, Pennsylvania Avenue Storm Sewer
January 1972 to December 31, 1974 (J. Colello)

The 24 inch Pennsylvania Avenue storm sewer and the 10-inch sewer, adjacent to it, were discharging liquid to the Passaic River, containing significant amounts of phosphate.

Since the Monsanto Company, nearby, was a manufacturer of this material, they were held responsible. In the time from January 1972 to October 1973, the Monsanto Company did many things to halt their pollution, including complete recycling of water that formerly went to the Passaic River and sealing off outlets to the storm sewer. However, the ground is considered saturated with phosphate and the ground water, with considerable phosphate in solution, continues to enter the storm sewer, thence the Passaic River.

The Monsanto Company had agreed to finance a program of TV inspection of the Kearny storm sewer,and thence a program to seal it from infiltration coming from the Monsanto plant, if the Town of Kearny would clean the storm sewer so that the TV equipment can be put in the sewer.

On October 15, 1973, Mr. Lubetkin wrote to the Town of Kearny informing them of Monsanto's agreement and Mr. Lubetkin requested that the Town do the necessary cleaning so the pollution can be eliminated.

On October 25, 1973, Mr. S. Aitkin of the Town of Kearny informed the PVSC that the matter had been turned over to the Superintendent of Public Works who would give this job high priority.

Since ncthing further had been heard from Kearny on this matter, on February 27, 1974 Mr. Lubetkin again wrote to it reminding them of the situation and requesting information as to when they could clean the storm sewer.

Inspector Colello reported that on March 13, 1974, the Sewer Department of Kearny tried to clean the sewer but couldn't get past a blockage. He reported that Mr. Delaney, Foreman, stated that a manhole would have to be built, due to the long run, in order to complete the cleaning.

On April 4, Mr. Lubetkin wrote to Kearny requesting information as to the time schedule on construction of the manhole. On April 9, Mr. J. Kurszwicz, Public Works Superintendent, replied, stating a time schedule would be forwarded as soon as the equipment was available.

Violation - Town of Kearny - Pennsylvania Ave. Storm Sewer (con't.)

On May 7, the Kearny crew discovered that the storm sewer contained a hard substance that significantly obstructed it. A piece was chipped out and analyzed and was found to be at least 60% calcium triphosphate. The Foreman, Mr. McAleavy informed the PVSC inspector that he would contact Monsanto about clearing the line of this material.

On October 29, 1974, Mr. Lubetkin wrote to Kearny, summarizing the problem, and stating that it was the PVSC understanding that Kearny would contact Monsanto about clearing this line of this material, so that the remainder of the work could proceed. Mr. Lubetkin requested an up-to-date report on this matter.

On November 12, 1974, Mr. J. McAleavy, Foreman of the Sewer Department. wrote to PVSC wherein he stated that it had been determined that the calcium triphosphate did not come from the Monsanto Company but from Newark Gypsum where it was used in the manufacture of plaster board. He stated that Newark Gypsum was no longer located in Kearny. He also stated that the blockage was on the property of Monsanto, and Kearny would have to dig up the sewer to correct it. He stated that he met with the River Inspector and since he felt the pollution was minimal that the matter should be left as is. On November 21, Mr. Lubetkin wrote to Mr. McAleavy stating that if Newark Gypsum was responsible for the blockage of a Kearny storm sewer, then they should be located and be made to pay for the removal of the blockage. PVSC did not think it proper to ignore a problem if the cause of the problem had relocated. If Newark Gypsum could not be located, or if they had gone out of business, then the situation would have to be re-evaluated. As of the end of 1974 no reply had been received from Kearny.

Violation - Mallinckrodt Chemical Co., Washine Division, Main Street, Lodi, N. J.
June 17 - December 31, 1974 (J. Perrapato)

While looking for the source of the coliform count in Saddle River, Inspector Perrapato noted a sewage odor behind Mallinkrodt Chemical Co. Building #2, which backs on Millbank Brook, a tributary of Saddle River. There were no visible pipes, but a few puddles in the area had the odor. Inspector Perrapato contacted the yard foreman and was told that there was a septic tank underground at that location.

Inspector Perrapato then notified the plant manager (Mr. J. Bauer) that the material seeping into Millbank Brook was a violation. Mr. Bauer contacted the Barry Kruger Company to empty the tank. A sample was taken to the PVSC laboratory and was found to be highly polluting.

Violation - Mallinckrodt Chemical Co. (continued)

This building (#2) was activated sometime after the explosion and fire (August 14-16,1973) of their main plant and obviously the increase in the number of employees (to approximately 15) is an overload on their septic system.

In addition they had a boiler blow down which discharged into Millbank Brook which was also polluting, however as of June 28, they installed a 1500 gallon tank for the boiler blowdown which was connected to the sanitary system.

On June 19, 1974, Mr. Lubetkin wrote to this company, informing them of the pollution and directing them to connect their waste discharge into the local sanitary sewer instead of letting it go into an obviously inadequate septic system.

On July 23, Mr. J. N. Bauer, Director of Operations, wrote to PVSC stating that they do not admit they were polluting Saddle River, but in a spirit of cooperation they had arranged to have the septic tank pumped out every month. They would also study the matter further and would advise PVSC of future development.

On July 24, Mr. Lubetkin replied that pumping the septic tank out every month was not satisfactory, since in the normal operation of a septic tank, material leaches into the ground and, due to its proximity, in this case, also into Millbank Brook. Mr. Lubetkin informed them that if they do not make arrangements immediately to connect into the local sanitary sewer, he would have to recommend to the Commissioners that this be turned over to the legal department for whatever action was necessary. Mr. Lubetkin told them he expected to be notified in writing by August 6, 1974, as to what would be done to halt the use of the septic tank.

On August 6, Mr. Bauer wrote to PVSC, stating that they were making arrangements to install a sanitary sewer line for their septic tank to the Lodi sewerage system. They were awaiting bids from several plumbing contractors, but expected the project to be completed within 90 days. On August 30, Mr. Bauer again wrote, stating that they anticipated the project to be completed by November 6, 1974.

On October 16, 1974, Mr. Bauer wrote to the PVSC, enclosing a copy of the engineering drawing for the new sewer tie-in, and he stated they were then soliciting bids from several qualified contractors.

On November 4, Mr. Bauer wrote to PVSC explaining that the delay was caused by some modifications in their electrical heat tracing system. On November 14, Mallinkrodt accepted the bid of Simon Plumbing of Bergenfield, N. J.

Violation - Mallinckrodt Chemical Co. (continued)

On December 4, 1974, Mr. Bauer wrote to PVSC stating that contracts had been awarded to a mechanical and an electrical contractor and that they were having problems in material availability.

As of the end of 1974, the electrical work was 90% complete and the mechanical contractor expected to have his steel supports in place in early January and hoped to be finished soon thereafter.

Violation - City of Newark (J. McLaughlin)

On February 6, 1970, Judgement was entered against the City of Newark to abate all pollution from the City's Lockwood Street and Blanchard Street Storm Sewers by May 6, 1970, (three months from the date of the Order), and the City of Newark was ordered to remove all pollution from the Meadowbrook Storm Sewer by August 6, 1970 (six months from date of Order). The city awarded contracts to construct a sewer in Lister and Blanchard Street in order to abate pollution from Blanchard Street, Lockwood Street and Brown Street Sewers. Problems occurred during construction due to change of engineers and administration.

The firm of Barnett and Herenchak was hired by the City to take over the engineering and supervision of construction, formerly done by Constrad. Work on this construction started on September 10, 1970, and continued until pollution was eliminated from the Brown Street sewer.

The City appeared in Court on September 18, 1970, and made application for an extension of time for their pollution.

On August 25,1971, Mr. Lubetkin wrote to Mr. S. Friscia, Director of the Department of Public Works, informing him that the pollutions have continued for a considerable period of time. He was also informed that it was the Commissioners' opinion that a considerable portion of the pollution in the lower Passaic River can be attributed to the discharges from these Newark Storm Sewers.

A conference was held on October 13, with Mr. Van Riper and Mr. R. Altiero of Newark, at the Commissioners' office. At this conference the representatives of the City promised to move forward to abate these long standing pollutions.

At the request of the Commissioners at their meeting of December 17, 1971, Mr. Segreto wrote to the Mayor and City Council on December 20, bringing this matter to their attention and point-

Violations - City of Newark (con't)

ing out that the City was in default of a court order of 1970, and informing them that if the City does not take action to comply with the court order, then an action will be instituted immediately for supplemental relief. Since no response was received, Mr. Segreto again wrote to both the Mayor and City Council on January 5, 1972. On January 19, Mr. F. D'Ascensio wrote to Mr. Segreto, informing him that the letter was brought before the City Council December 30, 1971, and a letter sent to Mayor Gibson, January 3, requesting information from the Mayor. Nothing was heard and a second letter dated January 6, was sent to the Mayor. As of January 19, the City Clerk stated that still nothing had been heard from the Mayor and the matter had been put on the calendar of the January 25, 1972 Special Conference of the Council.

On January 25, Mr. Roger Lowenstein, Assistant Corporation Counsel, called Mr. Segreto amd informed him that the matter had been referred to him and that he would confer with the Engineering Department and contact Mr. Segreto in a few days.

After hearing nothing further, Mr. Segreto filed a Notice of Motion for Supplemental Relief pursuant to the provisions of R.S. 1:10-5 in the Superior Court of New Jersey, Docket No. C-2886-68. Hearing was set for February 18, 1972.

At the hearing Newark admitted it was polluting and their new Chief Engineer, Mr. A. Zack, stated that Newark desired to halt the pollution but they would need time. Judge Ward Herbert ordered that the City of Newark submit to the Court and to the Commissioners within three months from date, a detailed written engineering report containing a specific proposal which Newark will undertake to abate the pollution. The order was dated February 28, 1972.

On June 8, the City of Newark sent a report to the Commissioners entitled " Pollution Report and Abatement Plan of the City of Newark" dated May 26, 1972. Mr. Lubetkin reviewed the report and although this report showed work done, it was not complete in many details, and after discussing the matter with the City, they agreed it was only an interim report to show that they are actively working on this matter.

On July 6, 1972, a conference was held at Newark City Hall. It was pointed out by Newark that a considerable amount of work had been done on these pollutions but they have not complied with the court orders concerning specific proposals, etc.

Violations - City of Newark (con't)

The City stated that it needed more time and would apply to the Court for this.

Since no action on a court application was made, Mr. Segreto on August 28, 1972, wrote to the City that unless the City moves by the end of the week, the Passaic Valley Sewerage Commissioners would have no alternative but to file motions for supplemental relief.

Receiving no reply, Mr. Segreto again wrote to Mr. Lowenstein outlining in detail the problem, and stating that this would be the last notification and that unless formal application for extension of time was made by the City, the Passaic Valley Sewerage Commissioners would have to apply for supplemental relief.

This was done on September 18, 1972, and the motions were scheduled for October 20, 1972.

In the meantime, in September 1972, the Harrison Ditch Storm Sewer was eliminated from the violation list.

At the request of the City, the motion was adjourned until November 19, 1972. In a letter to Mr. Segreto, dated October 20, a report on progress by Mr. A. Zach dated October 18, was enclosed.

On November 10, 1972, the matter was heard before Judge Herbert. The Court ordered illegal connections be terminated by March 1, 1973, and all pollution be halted by September 1, 1973.

On February 19, 1974, Mr. S. Friscia, Director of Public Works wrote to PVSC giving the status of each item as of that date (the information is included in the following detailed report).

On February 20, 1974, Mr. Raymond Nesto, Manager of Division of Sewers in Newark, addressed the PVSC, requesting help in halting the pollutions of the Newark sewers. He was assured that PVSC, as it always had in the past, would continue to help in any way possible. On February 27, Mr. Lubetkin wrote to him confirming this and suggesting a conference, and suggesting that the City's legal department contact the PVSC legal department and arrange for such a conference.

On June 24, 1974, Mr. Lubetkin wrote to Mr. Zack for an up-to-date report on any progress achieved to eliminate the various Newark Storm Sewer pollutions. On August 23, Mr. Nesto wrote to PVSC stating that funds for television inspection had been requested. On August 26, Mr. Lubetkin wrote Mr. Nesto requesting a time schedule for the work. On September 3, Mr. Lubetkin again wrote requesting further information, and Mr. Nesto replied on September 6 that the Standard Tallow Company was under mandate by the Health Department to

Violations - City of Newark (con't)

install facilities to eliminate grease discharges, and that the Norpak Corp. had been under litigation since 1972 to eliminate its septic tanks. He also stated that they are working towards the elimination of the problem of the various storm sewers.

On September 13, 1974, Chairman Bay wrote to Mayor Gibson on these matters, asking that he review them and requesting a decision as to what is to be done.

On January 16, 1975, Mr. Zack wrote to PVSC updating the Newark progress on each of the sewers involved. He stated that Newark was sorry it had not been able to complete the work more rapidly, however, due to limited funds,work had to be put off. He stated that it was Newark's intention to proceed in an expeditious fashion upon the availability of funds on or about April 1, 1975.

The following is the status as of the end of 1974:

Blanchard Street Storm Sewer - The discharge from this sewer contained oil, high B.O.D., and an exceptionally high C.O.D. The City of Newark, on March 30, 1971, engaged Robinson Pipe Cleaning Company to make a T.V. inspection of this line. However, the City reported that the inspection was frustrating because the storm sewer was not cleaned properly by the contractor and will have to be attempted again at a later date. At the October 13 conference, Mr. Van Riper said he would recommend to the City that a 1300 foot section of this sewer be replaced.

On December 14, Inspector J. McLaughlin reported that a greater quantity than usual of oily liquid was being discharged from this sewer to the river, with a strong petroleum odor. Mr. Van Riper was informed by telephone on December 15, by Mr. Goldberg as soon as he saw the sample, that the sewer had a potential explosive material in it. (This discharge had a C.O.D. of 26,107 mg/l). Mr. Lubetkin confirmed this in a letter dated December 17, 1971 to Mr. Van Riper.

The October 18 report recommended the relaying of 1300 feet of sewer from the bend in the road to the Passaic River in Blanchard Street. Plans and sepcifications were being prepared and the estimated cost of the work was $250,000.00. If the project could be funded by mid-December the work would be completed by June 1, 1973. The project was not funded.

Violations - City of Newark (con't)

As of the end of July 1973, Mr. Zack reported that plans, contracts and specifications had been prepared and the Division of Sewers was waiting the approval of a Bonding Ordinance by the City Council to provide funds for the project.

The City spent the latter part of 1973 rodding, dragging and jetting the sewer lines for cleaning. In the February 19, 1974 letter, Newark reported that the source of the pollution had been determined to be the effluent from the Standard Tallow Company. They also reported that they had served notice on Standard Tallow Company to cease and desist.

During 1975, Newark had continued to monitor the effluent from this sewer in an effort to determine where interconnections exist that introduce pollutants into the sewer. In addition, the proposed 1975 capital budget carries funds to conduct a more detailed cleaning of the sewer and a TV inspection and monitoring program. As each source of pollution is located, the connection will be removed and/or sealed as is determined by the Division of Sewers in the best interest of the City.

Brown Street Storm Sewer- Previously, the end of this sewer at Lister Avenue had been sealed and this storm sewer now only drains a one block length from the Passaic River to Lister Avenue. At the time it was sealed (4/23/71), it was assumed pollution was abated since no dry weather flow came from this sewer. However, as the tide goes in and out, it alternately fills and drains this sewer and evidently there is polluting material entering into this sewer again, since samples taken December 14, 1971,and January 25, 1972 showed high C.O.D., turbidity, and were positive to a H_2S test.

The June 8 report recommended a relining of this sewer, if feasible. Unfortunately, an inspection made after the report was written revealed a pile had been driven through this sewer. This pile had been driven in 1964, but according to Sherwin- Williams, the break area was boxed with concrete around the pile to give the sewer the same volume outflow. Although the area of the pile may not be the source of the polluting infiltration, it makes it difficult to reline the sewer. The polluting material, a "still bottom" was probably being pumped into the ground from some nearby industry, and the City of Newark's representatives said they were trying to locate the source.

The October 18 report stated they were still studying the feasibility of relining, and that they expected their analysis to be completed within thirty days.

Mr. Zack reported that relining was not feasible. He reported that the plan as of the end of 1972 was to seal and abandon this sewer and relay a new 12" storm line as a substitute.

Violations - City of Newark (con't)

As of the end of July 1973, Mr. Zack reported that arrangements are in process for a TV camera inspection to determine the condition of the line, to be followed by the necessary remedial action.

Monies had been requested, but not appropriated as expected, in the City's 1974 operating budget to clean this sewer and conduct a detailed television survey. It was anticipated that this would have been completed by the end of March 1974. Following this Mr. Friscia stated that illegal connections, if any, would be terminated, and areas of seepage, if existing, would be pressure grouted.

Funds have been established in the proposed 1975 capital budget to carry out the work previously mentioned. It is expected the funds would be available on or about April of 1975

Lockwood Street Storm Sewer- Mr. R. Altiero , Newark's Sewer Department Engineer, reported that on March 22, 1971, visual inspection of the Lockwood Street Sewer, between Lister Avenue and Euclid Avenue, was attempted. However, due to the excessive amount of silt and mud, it was impossible to complete that inspection. This portion of the Lockwood Street Storm Sewer was again cleaned by LaSal Contractors and examined. It was reported at the October 13, 1971 conference by representatives of Newark, that part of this sewer was failing and a consultant would have to be hired for recommendations.

The June 8 report again recommended a visual inspection and manhole to manhole survey be made in order to determine and seal illegal connections. In Mr. Zack's memo of June 6, he stated that it was anticipated this could be accomplished within a two month period.

The October 18 report stated they were listing all industries in the area and work was quite involved.

As of the end of July 1973, Mr. Zack reported that visual inspection of the line continued in order to determine and seal illegal connections and report the condition of the sewer line. He stated progress had been limited due to manpower available, but it was anticipated the survey would be completed in the near future.

The February 19, 1974 report stated that heavy deposits of silt and mud materials and gas in the line had prohibited any form of remedial action by the City's forces. They were waiting for funds to be appropriated in the 1974 Budget.

We are informed that funds for the corrective work had been included in the proposed 1975 capital budget.

Violations - City of Newark (con't)

Meadowbrook Storm Sewer - Coliform is still being detected at the discharge of this sewer to Second River, but the discharge is generally not polluting in other parameters. During 1971, several pollution connections to this sewer in Belleville were eliminated.

The June 8 report recommended a visual inspection and a flushing of this sewer. It was estimated a two month period was needed.

The October 18 report stated that detailed monitoring and surveillance was required, and cited the use of this sewer by Belleville as a possible source of pollution. They expected to isolate the responsibility for the pollution within two months time. Samples taken by Mr. R. Altiero indicated that a significant pollution was coming from the Belleville area.

As of the end of July 1973, Mr. Zack reported that Newark had eliminated all complaints for which they were responsible, and it was believed that Belleville was now the source of pollution. Mr. Zack also reported that Belleville is of the opinion that Bloomfield was in turn responsible for the pollution. Efforts by Newark to have the matter resolved had not been successful and had been referred to Newark's legal department.

The August 23, 1974 report from Newark again stated that there are no violations within Newark and that requests had been made of Newark's Legal Department to institute proceedings against the Town of Belleville. Mr. Lubetkin, in his letter to Newark dated August 26, 1974, pointed out that this statement had been also made previously (February 19, 1974) and requested further information as to the status of the legal action.

In Mr. Zack's letter of January 16, 1975, he repeated that the matter had been referred to the City's Law Department.

Roanoke Avenue Storm Sewer - Industrial waste continued to discharge into the Passaic River, despite the concrete dam built by the City to keep the sanitary sewer from overflowing into the storm sewer.

On December 30 and 31, 1970, the City attempted to walk and photograph a part of this sewer, to determine the source of pollution, with negative results. Mr. Altiero stated the sewer must be cleaned before they could reattempt to locate the source of pollution. He also reported that plans and estimates had been completed for the cleaning of the Roanoke Avenue Sewer between Doremus Avenue and Avenue P. In a

Violations - City of Newark (con't)

Roanoke Avenue Storm Sewer

letter dated August 31, Mr. Van Riper stated that he hoped for an award of a contract on September 1, 1971. During October, Mr. Van Riper stated that work was awarded to Condrin Construction Company, and work would begin in November. General Sewer Cleaning Company of Long Branch, New Jersey, a sub-contractor for Condrin, began cleaning this sewer on November 8, 1971. Sewer cleaning operations continued through November and the early part of December. On December 9, at approximately 9:30 A.M., the General Sewer Cleaning Co. was preparing to put a TV camera into the sewer when an explosion occurred, injuring three men. The explosion was located in the manhole of the Pitt-Consul Company property. Mr. Altiero reported to Inspector McLaughlin that further sampling would be done by the City, with analyses performed by Edel Laboratories before allowing anyone to enter the sewer. TV inspection was completed January 10, 1972, and a 10" connection was found west of Doremus Avenue on Pitt-Consul property with a highly polluting discharge (C.O.D. 2662 mg/l). On January 24, samples taken by Inspector McLaughlin showed explosive vapors in this sewer. Mr. Altiero was informed immediately and Mr. Lubetkin sent a follow-up letter to Mr. S. Friscia, Director of the Department of Public Works.

The June 8 report stated that the solution would be to relay approximately 1,200 feet of 54" pipe from Doremus Avenue to Avenue P. No time table was given, but they felt this work could not be done until 1973.

The October 18 report repeated that the solution would be to relay 1,200 feet of this line.

As of the end of July 1973, Mr. Zack reported that plans and specifications were being prepared for the replacement of approximately 1300 feet of 54" sewer from Doremus Avenue to Avenue P including the preparation of legislation for a bonding ordinance to provide the necessary funds.

Mr. Friscia reported that the City's 1974 Budget included an appropriation to purchase essential safety and testing equipment to permit inspection since explosive vapors are in this line. He stated they wished to make an inspection to confirm proposed construction as being the necessary way to halt the pollution.

Mr. Zack, in his letter of January 16, 1975, stated the work had not been done due to lack of funding, but stated, as with the other sewers, funds had been placed in the proposed 1975 capital budget for the above work. He further stated that these funds should be available on or about April of 1975.

Violation - Borough of North Arlington , Boston Avenue Storm Sewer
March 27, 1973 - December 31, 1974 (F. Cupo)

The Boston Avenue storm sewer is a 48 inch sewer located beside Gem Oil Company. A sample taken March 27 showed a very high fecal coliform count. Since there was a heavy rain just prior to this (March 25-26), another sample was taken April 11, which confirmed a very high fecal coliform and fecal streptococci, with a ratio indicating human pollution. On April 4, 1973, Mr. Lubetkin wrote to the Mayor and Council of the Borough, informing them of the pollution.

On April 18, the Health Officer informed Inspector Cupo that they had the discharge of this sewer independently analyzed and had also found it to be polluting with a high coliform count.

On April 30, Mrs. Ruth Dawson, Health Officer, wrote, requesting copies of results of PVSC analyses, and confirming that samples taken April 11 by North Arlington had a high coliform count.

On May 16, Mrs. Dawson wrote to the PVSC and reported that at a meeting of the Board of Health on May 8, it was decided that the problem of the storm drain polluting the Passaic River was a problem for the Mayor and Council, and in the future all communications will be directly with the Mayor and Council. Councilman A. Cerco stated they were aware of the problem and were taking action.

On June 11, 1973, Borough Clerk, Hedley House, wrote to the PVSC, stating that their Street Superintendent, Mr. L. Harvey, and Borough Engineer, Mr. Neglia, would take several readings on Boston Avenue to determine the exact point of pollution, and that the PVSC would be notified accordingly.

On July 10, 1973 a series of samples taken of various manholes on this storm sewer were analyzed. This analysis indicated that the sample taken from the manhole located on River Road at the center of Boston Avenue was highly polluted while the other samples were satisfactory.

During August 1973, it was discovered that the sewer was broken under River Road and infiltration had undermined the sanitary sewer, also under River Road, causing it to break.

Violation - Borough of North Arlington - Boston Avenue Storm Sewer (cont'd.)

On September 6, 1973, the Bergen County Road Department started repair of the sanitary sewer under River Road. During this repair, part of the sewer collapsed on September 7, and the waste was pumped into the Passaic River. On September 11, 1973 all work on the repair of the sanitary sewer was completed; however, samples of the Boston Avenue storm sewer showed pollution still existed. The break in the storm sewer had not been repaired.

On October 24, 1973, since no information was forthcoming on this matter, Mr. Lubetkin wrote to North Arlington again informing them of the pollution and requesting information as to what was being done to halt this pollution.

On November 12, 1973, the PVSC was sent a letter from the Borough Clerk, replying to the October 24 letter from PVSC, advising that the Borough is attempting to locate the break in the storm sewer and that Street Superintendent, Mr. L. Harvey, and Borough Engineer, J. Neglia, are working on this project and that PVSC would be notified as soon as information is submitted to the Borough Clerk's office.

On November 13, 1973, the Department of Health of North Arlington requested a current report, including whether or not the storm sewer had been repaired and,if it had,why was there still contamination from the storm drain.

On November 20, 1973, Mr. Lubetkin replied that the sewer had not been repaired and pollution was still emanating from it. Mr. Lubetkin pointed out that the two are separate items and the pollution is entering the sewer from a point or points above the known break and that the repair of the break (which was important to maintain the integrity of the sewer) would not halt the pollution. The source of the pollution should be found and rectified as a separate item.

On December 18, 1973, Mr. L. Harvey, Street Superintendent, submitted a report summarizing work being done on the River Road sanitary sewer. In this report he stated thay they inspected the storm sewer at River Road and Boston Avenue on November 12, 1973 and found no infiltration from the sanitary sewer. He also stated that they were continuing to check with visual and dye tests with the PVSC inspector when tides were favorable.

Violation - Borough of North Arlington - Boston Avenue Storm Sewer (continued)

Despite this, a sample taken on December 7, 1973 had a fecal coliform count of 88,000 per 100 ml.

On January 9, the Clerk of North Arlington wrote to the PVSC enclosing a copy of a resume of work done to correct this pollution. Mr. Lubetkin replied on January 22, 1974, acknowledging this, and reporting that despite this work, the pollution continued and the PVSC expected they would keep working until the pollution was eliminated.

During February and March a series of samples were taken by North Arlington personnel and analyzed by PVSC, and in addition on March 14, samples were sent by North Arlington to the East Orange Health Department for analysis which showed the presence of coliform.

On March 27, 1974, Mrs. Dawson requested copies of PVSC analyses (which were sent to her). On June 20, Mrs. Dawson requested a copy of the laboratory report on each sample taken June 13. These were sent to her.

During July, 1974, No. Arlington personnel continued dye testing the homes along Boston Avenue, with negative results.

On September 30, 1974, Mrs. Dawson wrote stating that to date, the tests on one house and on one commercial establishment were positive, but that they were reluctant to take any positive action at this time until they test the entire area and retest the two positive reactions. They also believe there may be a sewer line break.

On December 27, 1974, dye tests confirmed that sanitary waste was entering the storm sewer from 236 Boston Avenue and from the corner of River Road and Boston Avenue. Mrs. Dawson promised to take the matter before the Mayor and Council for corrective action.

Violation - City of Orange, Washington Street Storm Sewer
Intermittent

This is an intermittent violation. E.T. Killam Associates, in a report dated September, 1962, had originally recommended a complete rebuilding of this sewer to eliminate the pollution, but the cost was considered too high by the City. In 1965 the Commissioners took legal action against the City of Orange to halt the pollution.

The City did not build the new system needed, but as a result of the legal action, they plugged openings and repaired cracks to halt the pollution. They also installed a chlorination station, which went into operation May 15, 1966, to disinfect that sewage which they were unable to prevent from leaching into the system.

For a period of time samples were satisfactory, then samples were intermittently bad, as plugs fell out and cracks opened. Repairs were made as needed.

On March 9, 1971, the City informed the Commissioners that they were in the process of trying to obtain Federal and State assistance to improve the City's sanitary sewerage system. On March 22, Mr. Lubetkin wrote to the City, stating that the Commissioners hope that the work for which assistance is being sought will include the rebuilding of the Washington Street Storm Sewer.

On April 26, 1971, Mr. Lubetkin wrote to Mr. De Carlo, City Engineer, informing him of the problem and asking what program the City of Orange would institute to abate the pollution completely. A letter dated October 22, from the E. T. Killam Associates to the PVSC, explained that the City had made application to the Department of Housing and Urban Development for major improvements to the sewer system and had many meetings on this matter with H.U.D. and the Environmental Protection Agency. The letter stated that the City wished to proceed with this project, but was unable to do so until financial assistance could be obtained from the Federal or State Government.

On November 4, 1971, Mr. Lubetkin wrote to the N.J. Department of Environmental Protection to determine the status of the City of Orange, and received a reply dated November 17, stating that the NJDEP does not have information on progress of H.U.D.'s review. On November 19, Mr. Lubetkin wrote to H.U.D., requesting the status of the City's application. No reply was received; however on December 16, Mr. DeCarlo wrote to the PVSC, informing that they have had meetings with H.U.D. and received a project

Violation - City of Orange , Washington Street Storm Sewer (continued)

number which made him optimistic.

On January 7, Mr. DeCarlo wrote that as of January 5, 1972, the City of Orange had filed complete application form H.U.D. Project # WSF-NJ-02-39-1033 for the construction of a new collector system for portions of the City and also to eliminate direct interconnection between sanitary and storm sewers, as well as a program of elimination of sewer infiltration.

On February 22, Mr. J. Foley of E.T. Killam Associates, Inc. wrote to Mr. Lubetkin, enclosing a letter dated February 9, from the Environmental Protection Agency, stating that based on information they had, they were unable to certify the project at that time as the wastes were discharged into combined sewers, without storm water overflow treatment. However, in order to certify the project, even conditionally, they required additional data on the PVSC.

On March 6, Mr. Lubetkin wrote that any information they desired was available. Mr. Foley replied on March 10, stating that the information was no longer needed by the Environmental Protection Agency to process the application.

On May 24, Mr. DeCarlo wrote to the PVSC, informing them that the Department of Housing and Urban Development had issued a grant in the amount of $1,391,250.00 under Project WSF-NJ-02-39-1033, Orange, N.J. On May 30, Mr. Lubetkin requested information on exactly what work will be done to eliminate the pollution of Second River from the City of Orange.

On September 22, 1972, Mr. DeCarlo wrote to the PVSC stating that plans for the construction of the outlet sewer from Washington Street and North Day Street to the Second River Chamber on Glenwood Avenue were 95% complete. They were hopeful of going out for bids on this part of the project by December 1, 1972.

On January 26, 1973, Mr. DeCarlo wrote to the PVSC explaining they anticipated plans and specifications for the entire project would be completed and submitted to the N.J. Department of Environmental Protection by May 17, 1973, and as soon as approvals were obtained, construction would be started.

Violation - City of Orange, Washington Street Storm Sewer (con't.)

Although the project was originally approved by H.U.D. in the middle of 1972, because of problems of rights of way, etc., there were delays.

On February 27, 1974, Mr. DeCarlo wrote that on January 28, 1974, contracts were awarded in the amount of $664,407.75 on the first part of Orange's sewer rehabilitation program. Unfortunately, the first part will not halt the intermittent pollution of Second River, and it is hoped that Orange will complete the second part as soon as possible.

On June 6, 1974, Mr. DeCarlo wrote that the City planned to receive bids at the end of July for work that would eliminate the sanitary sewer overflows to the Parrow Brook Storm Sewer (thence Washington Street Storm Sewer). Advertisements did appear in the newspaper during July for this work, and bids were received on August 1, 1974. The City awarded the contract to the low bidder, A. E. Recchio, Inc., subject to the approval of H.U.D.

As of the end of 1974, the City refused to issue a Notice to Proceed for this work, since the principals of A. E. Recchio, Inc. are the same as the contractor on their first set of contracts, and the City was having difficulty with them. Mr. J. Petrucelli, Acting Municipal Engineer, informed PVSC that they expected this problem to be resolved shortly and work should start within a month.